

The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 1625.—Vol. XXXVI.

LONDON, SATURDAY, OCTOBER 13, 1866.

{STAMPED...SIXPENCE.
{UNSTAMPED...FIVEPENCE.

MR. JAMES CROFTS, STOCK AND SHAREBROKER,
No. 1, FINCH LANE, CORNHILL.
(Established 23 years.)

Mr. CROFTS solicits orders for the shares mentioned in his letter, on p. 1, of this day's Journal, the state of the market being highly in favour of buyers, and viewing the present state of prices as quite of a temporary character, it will be found, as Mr. CROFTS asserts, that "the enumeration of the shares in his list, taking unquestionable rank amongst the cream of the market, but most unutilized speculator can scarcely go astray in operating at once; but Mr. CROFTS, if appealed for his advice as to the selections to be made, will give (as is his custom) free from any bias or interest in the mines themselves."

Bankers: National Bank of Scotland, Finch-lane.

MR. JAMES LANE, No. 44, THREADNEEDLE STREET, LONDON, E.C.
ALL SHARE TRANSACTIONS open with the late Mr. JAMES LANE will be carried through by the undersigned, Messrs. LANE and GIBBS, of 2, ROYAL EXCHANGE, LONDON, E.C., to whom all communications are to be addressed.—Oct. 12, 1866.
FRANCIS G. LANE, JOHN GIBBS.

MR. LEAN, ENGLISH AND FOREIGN STOCK AND SHAREDEALER,
11, ROYAL EXCHANGE, LONDON, E.C.
Bankers: Roberts, Lubbock, and Co., Lombard-street.

GUIDE TO INVESTORS.—MR. LEAN'S STOCK, SHARE, AND FINANCE REGISTER for October (published on Wednesday last) contains the third of a series of articles on the whole circle of Investments—British and Foreign Stocks and Loans, Bank and Finance, Railway and Insurance, Gas and Water, and Manufacturing and Commercial Shares; with other information as is necessary to guide intending investors amidst the shoals and quicksands of the multifarious species of investments that now present themselves; and a tabulated statement of the capital, value of shares, liabilities and assets, and the ratio between them; reserve fund, &c., of thirty-eight joint-stock banks. Published by Pottle and Son, 14 and 15, Royal Exchange, London, E.C.
Price 6d., or 6s. annually.

NOTICE OF REMOVAL.—GEORGE RICE, SHAREDEALER,
5, Cowper's-court, Birch-lane, London, has REMOVED to 78, OLD BROAD STREET, LONDON (close to the Stock Exchange).

GEORGE RICE, SHAREDEALER, 78, OLD BROAD STREET, LONDON, E.C. (24 years' experience), Member of the Mining Exchange, DEALS IN MINING SHARES at close market prices of the day, either as BUYER or SELLER, for cash or account. The following are the latest market prices:—

Clifford	£ 8 - 8 1/2	East Russell	£ 2 1/2 - £ 3
Chiverton	3 1/4 - 4	Frontino	8s. 6d. - 9s. 6d.
Chiverton Moor	4 1/2 - 5	Great West	18 - 19
Chontales	3 1/2 - 3 3/4	Marke Valley	4 1/2 - 4 3/4
East Basset	21 - 22	North Treskerby	3 - 3 1/4
East Caradon	5 - 5 1/2	Prince of Wales	27s. - 28s.
East Carn Brea	2 1/4 - 2 1/2	St. John del Rey	47 - 48
East Grenville	2 - 2 1/4	West Chiverton	59 - 60
East Lovell	9 1/4 - 10	Wheal Grenville	1 1/4 - 1 1/2

There are some low-priced shares in the above list which should be bought immediately for a rise, whilst there are others which have attained a high figure should be sold at once.
Money advanced on mining shares.
Bankers: Bank of England.

GEORGE RICE recommends the purchase of **WHEAL CREBOR**, selling for 15s. per share, or £4500 for the entire mine. PRICE OF WALES, in same district, is now selling for £1 7s. 6d. per share, or about £18,000 for the entire mine.
GEORGE RICE recommends the purchase of **WHEAL GRENVILLE**, selling for £1 10s. per share, or £3000 for the entire mine. **EAST LOVELL**, a similar tin mine, is selling at about £10 per share, or £20,000 for the entire mine.

MR. JOHN BATTERS, STOCK AND MINING SHAREBROKER, 13, THROGMORTON STREET, LONDON, E.C.

MR. WILLIAM WARD, STOCK AND SHAREDEALER,
No. 29, THREADNEEDLE STREET, LONDON, E.C.

JAMES D. GINN AND CO., STOCK AND SHAREDEALERS,
3, CROWN COURT, THREADNEEDLE STREET, LONDON, E.C.

MR. G. D. SANDY, STOCK AND SHAREDEALER,
No. 48, THREADNEEDLE STREET, LONDON, E.C., TRANSACTS BUSINESS IN EVERY DESCRIPTION OF STOCK EXCHANGE SECURITIES, MINING AND FINANCIAL ENTERPRISES, at close market prices.
WANTED TO PURCHASE:—50 East Bottle Hill shares. Sellers please state lowest price.
Correct Daily Price List may be had on application.
Money advanced to any amount on legitimate stocks and shares.
References exchanged.

MR. G. D. SANDY'S INVESTMENT CIRCULAR.—
SPECIAL NOTICE.—Valid all hitherto published.
48, Threadneedle-street, London, E.C., Oct. 12, 1866.

MESSRS. WILSON, WARD, AND CO., STOCK AND SHAREDEALERS,
16, UNION COURT, OLD BROAD STREET, LONDON, E.C.

Messrs. WILSON, WARD, AND CO. are DEALERS in the FOLLOWING SHARES, at market prices:—Frontino and Bolivia Gold, Great Laxey, Caldbeck Fells, Pen-hale and Lomax, New Wheel Tawan, and North Treskerby. Can recommend two good mines for investment. Their fortnightly Circular may be had on application.

NOTICE OF REMOVAL.—MCNEILL and LONG have REMOVED from 7, Pope's Head-alley, Lombard-street, to 31, THREADNEEDLE STREET, LONDON, E.C.

MR. T. ROSEWARNE, 81, OLD BROAD STREET, LONDON, E.C., is a DEALER in the FOLLOWING SHARES, for cash or "time on":—
Prince of Wales. West Chiverton. Grenville.
Marke Valley. West Caradon. East Gunnislake.
Wheal Rose. South Frances.
North Treskerby. East Lovell. East Carn Brea.
Wheal Seton. Caldbeck Fells. North Downs.
Chontales. Frontino. Devon Consols.
Chiverton Moor.

PRINCE OF WALES.—The lode is now worth 50l. per fm. in the 45 (east, and rise 30l. per fm., and likely for further improvements. This mine is opening out splendidly, and I would say to all my friends to double their interest at once at the present price. There are several other lodes of great importance to be intersected shortly, and if cut good I should not be at all surprised to see the shares at £10 per share, and to dispel any doubts would advise people to send their own agents to inspect it.
An OFFER WANTED for Okel Tor and New Trelawny.
Money advanced on marketable mining shares.
Office hours. Ten till Four.
Bankers: Bank of England, and Consolidated.

MR. JAMES HUME, 74, OLD BROAD STREET, LONDON, E.C. (Member of the Mining Exchange), Executes orders in mining shares at net prices, equivalent to 1 1/4 per cent. commission, and Stock Exchange securities at the usual charge.
All communications punctually attended to, and cash sent on receipt of transfer.
Bankers: The London Joint Stock Bank.

MR. GEORGE BUDGE, No. 4, ROYAL EXCHANGE BUILDINGS, LONDON, E.C. (Established 18 years), has FOR SALE at net prices:—50 South Callington; 10 East Carn Brea, £2 1/4; 50 Chontales; 100 Mineral Rights, 15s.; 60 Wheal Grenville; 1 Devon Great Consols, £450; 70 Prince of Wales; 100 South Grenville, 6s. 6d.; 40 Great Vor, £20; 100 Great South Trelawny, 4s. 6d.; 100 West Killy; 70 East Seton, 5s.; 40 Frank Mills; 15 Gawton, £3 14s. 9d.; 120 Dale; 20 South Darren; 5 West Frances, £2 1/2; 50 Pestaren, £2 1s. 3d.; 2 East Basset, £22 1/2; 2 Minera; 5 Clifford Amalgamated; 30 Carn Camborne, 26s.; 50 Redmoor, 6s.; 150 Gwydyr Park, 1s. 6d.; 40 Great Retallack, 10s.; 80 Caldbeck Fells; 10 West Caradon; 70 New Trelawny; 20 So. Condurrow; 100 Hollybush, £2 1/2; 100 North Chiverton; 1 Wheal Seton; 40 Camborne; 100 Don Pedro, 17s.; 120 Anglo-Brazilian, 9s. 3d.; 3 Great Laxey; 15 Cohe Copper, £2 1/2.
SPECIAL BUSINESS in Cape Copper, United Mexican, Alamitos, Port Phillip, Minas, Yudanamutana, St. John del Rey, and Washoe Gold.

WEST CARADON, AND PRINCE OF WALES MINES.—
PETER WATSON'S "WEEKLY MINING CIRCULAR" of yesterday (No. 392, Vol. VIII.), price 6d. each copy, contains important information on the above mines, also on East Lovell, Grambler and St. Aubyn, Chiverton Moor, &c.

WEEKLY MINING CIRCULAR AND SHARE LIST.—
SYNOPSIS OF CORNISH AND DEVON MINES, &c. (No. 391, Vol. VIII.), contains important information on the following mines:—
West Caradon. South Caradon. Wheal Seton.
Devon Great Consols. Great Wheal Vor. West Chiverton.
Clifford Amalgamated. East Caradon. East Carn Brea.
Wheal Trelawny. Wheal Mary Ann. East Basset.
Chiverton Moor. North Treskerby. Hingston Down.
Prince of Wales. Tincroft. East Wheal Russell.
Wheal Buller. Marke Valley. Wheal Chiverton.
East Wheal Lovell. Grambler & St. Aubyn. Trumpet Consols.
New Wheal Seton. Frank Mills.
Remarks on the Stock and Share Markets, Mining Share Market, and the Metal Market, &c.

Mr. PETER WATSON has been in Cornwall and Devon seven to eight weeks, visiting and obtaining general information respecting most of the leading dividend and progressive mines. Last week's "Mining Circular," No. 391, contains important information on the above mines, which will be forwarded by post on application, price 6d. each copy.
Mr. PETER WATSON returned to business (London) last week, and is in a position to advise with his customers and others as to purchases or sales of Cornish and Devon Mines shares.—79, Old Broad-street, London, E.C.

THE LONDON DAILY RECORD, STOCK AND SHARE LIST.—Sent out by every evening mail to country subscribers, and every other description of shares bought and sold at net prices. Given the latest correct closing prices of stocks and shares, &c., of the day.
Annual subscription

PETER WATSON, Stock and Sharedealer, 79, Old Broad-street, London, E.C.

STOCK AND SHAREDEALER.—MR. PETER WATSON,
ENGLISH AND FOREIGN STOCK, SHARE, AND MINING OFFICES, 79, OLD BROAD STREET, LONDON, E.C.
Railway, Joint-Stock Banks, Dock, Insurance, Canal, Mining, Steam-ship, &c., and every other description of shares bought and sold at net prices.
TELEGRAPHIC MESSAGES TO BUY or SELL Railway, Bank, Mine, and other shares and stocks, punctually attended to, at net prices for cash, or for fortnightly settlements, with advice as to purchases or sales.
Twenty-two years' experience.
(Two in Cornwall and Twenty in London.)
Bankers: The Alliance Bank, and the Union Bank of London.

MR. EDWARD COOKE, STOCK AND SHAREDEALER,
2, CROWN CHAMBERS, THREADNEEDLE STREET, E.C., is a BUYER or SELLER of Tresavean, East Lovell, Great Vor, Clifford, Tincroft, North Treskerby, Chontales, Marke Valley, East Caradon, Credit Foncier, Anglo-American, Atlantic Telegraph, and American securities, at the current prices of the day. Telegraphic messages promptly attended to.
Satisfactory references given in any town in the United Kingdom.
SPECIAL BUSINESS in West Caradon, either as a buyer or seller.
Bankers: Alliance Bank, Lothbury.

MR. C. A. POWELL, SHAREDEALER, 78, OLD BROAD STREET AND MINING EXCHANGE, LONDON, E.C.
Business transacted in the PURCHASE or SALE of SHARES at net prices for cash or the fortnightly settlement.
Oct. 12, 1866. Bankers: Bank of England.

CALDBECK FELS, FRONTINO AND BOLIVIA, CHONTALES, MINERAL RIGHTS.—Parties wishing to BUY or SELL in either of the above will find a ready medium for the negotiation of their business by applying to Mr. C. A. POWELL, 78, Old Broad-street, London, E.C.

MR. WILLIAM SEWARD, STOCK AND SHAREDEALER,
19, THROGMORTON STREET, LONDON, E.C.

JOHN RISLEY, 32, LOMBARD STREET, AND MINING EXCHANGE, LONDON, E.C., has SPECIAL BUSINESS in East Grenville, Wheal Buller, and West Caradon shares.

MR. JOHN LITTLE, STOCK AND SHAREDEALER,
77, OLD BROAD STREET, LONDON, E.C. (late of Redruth).
Immediate attention to orders by telegraph or letter.
Prompt cash settlements.

MATTHEW GREENE, STOCK AND SHAREDEALER,
ST. MICHAEL'S HOUSE, CORNHILL, LONDON, E.C.
MATTHEW GREENE has for ABSOLUTE SALE, and free of commission, the FOLLOWING SHARES:—

20 Camb. Veau, 24s. 9d.	5 East Lovell, £10 1/4.	20 North Crofty, £1 2 1/2
10 Carn Camborne, 22s.	150 East Rosewarne, 10s.	20 No. Treskerby, £2 1/4
15 Chiverton Moor, £4 1/2.	30 Prince of Wales, 25s.	30 Prince of Wales, 25s.
50 Chontales, £2 1/4.	20 East Grenville, £2 1/2.	5 West Caradon, £15.
10 Clifford, £3.	50 Frontino, 10s.	5 West Chiverton, £20.
5 East Basset, £21 1/2.	10 Great Laxey, £19 1/2.	2 Wh. Seton, £160 x d

Bankers: Imperial Bank. Office hours, 10 to 4.

BARTLETT AND CHAPMAN, STOCK AND SHAREDEALERS, 2, BUCKLESBURY, LONDON, E.C., are in a position to NEGOTIATE BUSINESS in the FOLLOWING SHARES at close market prices:—

Chiverton Moor	4 1/2 - 5	Great Laxey	£ 18 1/2 - £ 19
Clifford Amalgamated	7 1/2 - 8	North Treskerby	3 1/2 - 3 3/4
Chontales	3 1/4 - 3 1/2	Prince of Wales	25s. 6d. - 28s. 6d.
East Chiverton	1 - 1 1/4	West Caradon	13 1/2 - 14 1/4
East Russell	2 1/2 - 3	West Chiverton	60 - 61
East Lovell	9 1/2 - 10	Wheal Grenville	1 1/2 - 1 3/4
East Grenville	2 - 2 1/2	Wheal Seton	15 1/2 - 16 1/2
Great Wheal Vor	18 1/2 - 19 1/2	Wheal Buller	24 - 25

The "Investment Circular and Financial Record for October" is now ready, and can be had gratis on application.
Shares in Banks, Railways, Finance, and Miscellaneous Companies dealt in at closest market prices. A selected list forwarded on application.
NEW CROW HILL MINE.—An offer wanted for 50 shares.
Bankers: London and Westminster.

MR. E. GOMPERS, STOCK AND SHAREDEALER,
PRINCE OF WALES MINE.—During the past few months this mine has improved as the different points have been developed, the ends now driven being of increased value, more especially in the value of the ore. In drawing the attention of his friends and the public to these shares, Mr. GOMPERS refers with pleasure to advice given on previous occasions, and can safely say that it has always been on the cautious and safe side, and now having had Prince of Wales inspected by a thoroughly practical mine agent, on whose opinion he places the greatest reliance, can confidently advise his friends, and those who are at present shareholders, not to part with their interest. The price of shares on the market may fluctuate daily, but there can be no doubt but that if the shares are kept for a short time they will prove a very profitable investment. Judging from the quality of the ore, and the early cutting of the lode, Mr. GOMPERS believes that ere long dividends will be declared.
Mr. GOMPERS is a dealer in Prince of Wales shares either as BUYER or SELLER.

INVESTMENT, LOAN, AND BANK AGENCY.—
Established 1859.
BANKERS—London and County Bank.

This Agency undertakes the investment of Capital in British and Foreign Government Stocks and Joint-stock Companies upon advantageous terms; and devotes special attention to the selection of such Securities as pay good dividends, are readily convertible, perfectly free from risk or liability, and the most probable to speedily and permanently improve in value.
Every information afforded to Trustees and others, who seek investments of a strictly eligible and safe character.
Loans granted on Stocks and Shares having a market value, interest allowed upon deposits, and every description of Bank and Money Agency business transacted.
CHARLES PETERS, Sec.
No. 12, Clement's-lane, Lombard-street, London, E.C.

MR. CHARLES THOMAS, MINING AGENT, GENERAL SHAREDEALER, AND AUCTIONEER,
3, GREAT ST. HELEN'S, LONDON, E.C.

MR. CHARLES THOMAS has SPECIAL BUSINESS in West Caradon, West Wheal Kitty, Great Retallack, Prince of Wales, East Carn Brea, Wheal Rose, Redmoor, North Downs, and South Wheal Grenville.—Address, 3, Great St. Helen's, London, E.C.

MR. T. E. W. THOMAS, MINING AGENT AND GENERAL MINING SHAREDEALER, UNION CHAMBERS, UNION COURT, OLD BROAD STREET, LONDON, E.C.
Mr. THOMAS recommends West Wheal Kitty shares for purchase at the present price—6s. 6d. per share. North Crofty and South Condurrow shares are also well worth buying for a quick market rise.

MESSRS. LANE AND GIBBS, 2, ROYAL EXCHANGE, LONDON, E.C., STOCK AND SHAREDEALERS, AND FINANCIAL AGENTS, transact business in all kinds of securities at closest net prices for cash or account.
Parties of respectability can have transfers registered in their names previous to payment.
Daily price list on application.
Bankers: London and County Bank.

MR. F. W. MANSELL, 26, THROGMORTON STREET, E.C., and MINING EXCHANGE, LONDON, STOCK AND MINING SHAREDEALER (Eighteen years' experience).
Mr. F. W. MANSELL, being in constant communication with the leading agents in Devon and Cornwall, should be at once consulted as to the various mines now so prominently before the public. Mr. MANSELL is convinced that large sums of money may now be made by a prudent selection in British Mines, a list of which will be forwarded on application.—26, Throgmorton-street, E.C.
Bankers: London Joint Stock.

HENRY GOULD SHARP, STOCK AND SHAREDEALER,
No. 32, POULTRY, LONDON, E.C.

Has SPECIAL BUSINESS in the following SHARES at close market prices:—

Buyers.		Sellers.		Buyers.		Sellers.	
Chiverton	3 1/4 - 4	Herodsfoot	£ 31 - £ 32	Chiverton Moor	4 1/2 - 5	Marke Valley	4 1/2 - 4 3/4
Clifford Amalgamated	7 1/2 - 8	North Treskerby	3 1/2 - 3 3/4	Chontales	3 1/4 - 3 1/2	New Seton	36 - 40
Carn Camborne	24s. - 26s.	Prince of Wales	27s. - 28s.	East Basset	20 - 21	South Condurrow	18s. - 20s.
East Basset	20 - 21	St. John del Rey	47 - 48	East Lovell	9 1/4 - 9 1/2	Tincroft	8 1/2 - 9 1/4
East Caradon	6 - 6 1/2	West Caradon	14 1/2 - 15 1/4	East Grenville	2 1/2 - 2 3/4	West Chiverton	61 - 62
East Carn Brea	2 - 2 1/4	Wheal Basset	81 - 84	Frontino and Bolivia	9s. - 10s.	Wheal Buller	24 1/2 - 25 1/4
Great Laxey	18 1/2 - 19	Wheal Grenville	23s. - 26s.	Great Laxey	18 1/2 - 19	Wheal Seton	160 - 165
Great North Laxey	18 1/2 - 19			Great Retallack	7s. - 8s.		
Great Wheal Vor	19 1/2 - 20 1/4						

SPECIALITY RECOMMENDED:—West Caradon, North Treskerby, Wheal Seton, Clifford Amalgamated, and West Chiverton.

MR. THOMAS THOMPSON, MINING OFFICES,
12, OLD JEWRY CHAMBERS, LONDON, E.C.

SOUTH TOLGUS—COPPER HILL.—MR. H. B. RYE is a BUYER of FIFTY SHARES in both these mines. Sellers please state lowest price.—77, Old Broad-street; and Mining Exchange, London.

MESSRS. WARD AND JACKMAN, STOCK AND SHAREDEALERS,
CUSHION COURT, OLD BROAD STREET, CITY, E.C.
Closing prices, Friday, Oct. 12.

Buyers.		Sellers.		Buyers.		Sellers.	
*Clifford	£ 8 - £ 8 1/2	*North Treskerby	£ 3 - £ 3 1/4	*Chiverton Moor	4 1/2 - 5	*New Seton	35 - 40
*Chiverton Moor	4 1/2 - 5	*Prince of Wales	27s. - 28s.	*Chontales	3 1/4 - 3 1/2	*South Condurrow	18 - 20
*Cook's Kitchen	4 1/2 - 5 1/2	*South Grenville	34 - 36	*East Basset	21 - 22	*Tincroft	8 1/2 - 9 1/4
*East Basset	21 - 22	*Wheal Basset	81 - 84	*East Lovell	9 1/4 - 9 1/2	*West Caradon	14 1/2 - 15 1/4
*East Caradon	6 - 6 1/2	*Wheal Buller	24 1/2 - 25 1/4	*East Grenville	2 1/2 - 2 3/4	*West Chiverton	59 - 61
*East Carn Brea	2 - 2 1/4	*Wheal Seton	155 - 160 x d.	*Frontino	9s. - 10s.	*Wheal Grenville	1 1/2 - 1 3/4
*Gramer & St. Aub.	6 - 7			*Great Vor	18 - 20		
*Great Vor	18 - 20			*Mineral Rights	1/2 - 1 1/4		

Messrs. WARD AND JACKMAN refer their friends to their remarks on p. 657 respecting those mines marked *.
All orders to buy or sell shares of every description promptly attended to, for cash or account.
Bankers: London and Westminster, Lothbury.

MR. WILLIAM MARLBOROUGH, 1, GREAT ST. HELEN'S, BISHOPSGATE STREET, LONDON, E.C. (Established 12 years), has FOR SALE the FOLLOWING SHARES, at net prices:—

3 East Basset, £21 1/2.	2 New Seton, £37 1/2.	5 West Caradon, £14 1/2.
10 East Lovell, £29 1/2.	40 North Crofty, 20s. 6d.	3 West Chiverton, £259 1/2.
15 East Caradon, £25 1/2.	25 No. Treskerby, £29 1/2.	5 West Frances, £26 1/2.
25 E. Carn Brea, 44s. 9d.	75 North Downs, 10s.	25 Wheal Agar, 22s.
20 East Russell, £25.	60 Mineral Rights, 13s.	1 West Seton, £133.
30 East Grenville, 44s.	5 Mary Ann, £10 1/2.	1 Wheal Seton, £161 1/2.
10 Grambler, £26 1/2.	10 Marke Valley, £4 10 6	20 Wh. Chiverton, £23 1/2.
80 Prince of Wales, 27s.	5 Great Vor, £18 1/2.	40 Wh. Grenville, 26s. 3d.
30 So. Condurrow, 19s.	50 Gt. So. Tolgus, 2s.	2 Wheal Buller, £25 1/2.
50 Caldbeck Fells, 22s. 3d.	5 Providence, £24 1/2.	70 West Kitty, 8s. 3d.
70 Frontino, 9s. 6d.	10 Clifford, £28 8s. 9d.	30 Rosewarne Unit, 9s.
30 Chontales, 7s. 6d.	5 Carn Brea, £13 1/2.	50 Redmoor, 2s. 6d.
50 Drake Walls, 5s. 9d.	15 Hingston, £2 2s. 9d.	15 South Darren, 41s. 3d.
50 Gt. Minera, 8s. 9d.	10 Tincroft, £23 1/2.	50 New Lovell, 8s. 9d.
40 Carn Camborne, 23s. 3d.	1 Wheal Basset, £7 1/2.	25 Cook's Kitchen, £4 1/2.
50 Crebor, 12s. 3d.	10 Great Fortune, £4 13	60 E. Providence, 4s. 3d.
35 Frank Mills, 47s. 6d.	50 Gt. Retallack, 7s. 9d.	5 South Frances, £19 1/2.
45 Gt. No. Laxey, 32s. 6d.	10 Great Laxey, £19.	50 South Callington.

MR. EDWARD BREWIS is a BUYER or SELLER, for Cash or Account, or for dealings end of the Year, end of March, June, or Sept., 1867, in the undermentioned MINES:—
Chiverton. Chiverton Moor. Westminster.
West Chiverton. East Bottle Hill. Chontales Gold.
South Condurrow. Prince of Wales. West Caradon.
Frontino and Bolivia. Caldbeck Fells. Clifford.
No. 8, Warford-court, Bank, E.C.

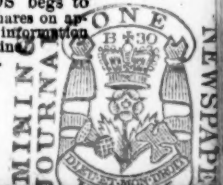
FOR SALE, the FOLLOWING SHARES:—20 Garladina 3s. 6d.; 20 Westminster Lead, £5 (fully paid-up); 50 East Jane, 3s. 6d.; 25 South Callington, 30s.; 50 Gwydyr Park, 1s. 6d. (worth buying); 25 North Pool; 1 East Caradon, £7; 15 West Wheal Kitty, 8s.
Apply to Mr. R. EMERSON, 28, Great Winchester-street, London, E.C.

Advice given on the sale and purchase of shares.
Eighteen years' experience in Cornwall and twelve in London.
Mr. R. EMERSON still recommends the purchase of Westminster Lead Mine Shares (Limited). The mine at the present time is returning 50 tons of lead ore per month, and when the additional machinery is at work they will be able to raise from 150 to 200 tons per month, and the shares must advance in price considerably.

MR. J. B. REYNOLDS, MINING OFFICES, 70 and 71, BISHOPSGATE STREET WITHIN, LONDON, E.C.

Begs to call the attention of his clients to mines, the merits of which are quite overlooked by the public generally, and cautions his friends against many undertakings which have not the slightest merit. Mr. REYNOLDS endeavours to remember that the interest of the agent is identical with the interest of the customer, and appeals to his judgment in the past as a reason for expecting confidence in the future. Two out of the six mines recommended in his September "Circular" have already experienced a considerable advance, and his confidence in South Callington as a strong and substantial company, and in the mine itself, as one of rare merit, is undiminished.
Mr. REYNOLDS transacts business in British and Foreign Stocks, Railway, Bank, Insurance, Financial, or Mining Companies shares, and all miscellaneous securities, at the lowest market quotations.—Oct. 12, 1866.

SOUTH CALLINGTON.—MR. J. B. REYNOLDS begs to inform all sellers that they will find a ready market for shares on application to him. He will at the same time be happy to give every information in his power respecting the present position and prospects of the mine.
70 and 71, Bishopsgate-street Within, London, E.C., Oct. 12, 1866.



Original Correspondence.

THE SCOTCH PIG-IRON TRADE.

SIR,—I beg to hand you, in the most condensed form I can, the fluctuations in the stock of Scotch pig-iron in the last 12 months:—

On Sept. 30, 1865, the total stock was	Tons 570,000
On Dec. 31, 1865, " "	550,000
On March 31, 1866, " "	530,000
On June 30, 1866, " "	606,000
On Sept. 30, 1866, " "	470,000

From this statement it will be seen that the total increase of stock from Sept. 30, 1865, to June 30, 1866, was only 36,000 tons. During that time there were 133 to 138 furnaces in blast, and the price was 56s. 6d. to 64s. 6d. for the last quarter of 1865; 65s. to 80s. for the first quarter of 1866; 74s. to 80s. for the second quarter of 1866; collapsing, however, in May to near 50s. The decrease of 136,000 tons took place in the months of July, August, and September, when we had an average of only 82 furnaces in blast. Looking at these facts from our present stand-point of 88 furnaces in blast, and the price 54s. 6d., we cannot but expect a large decrease of stock for many months to come.—*Glasgow, Oct. 11.* BROKER.

"INDIUM."

SIR,—Arriving from Germany, where indium is pretty well known, and not having seen anything relating to it in English scientific papers, I propose to introduce the subject to your readers, hoping it may lead to fresh and interesting discoveries. This metal was discovered in the summer of 1863 by Prof. Richter and Inspector Reich, of the Freiberg Mining Academy, by means of the spectroscopic. It has hitherto only been detected in the dark ferruginous blende of the mine Himmelfahrt, near Freiberg. Richter first extracted it from the blende, but soon found a better material for his purpose in the zinc manufactured at the Freiberg Smelting Works. According to the analysis of Dr. Winkler, who assisted Richter in determining the properties of indium, this zinc contains 0.0448 per cent. of the new metal. Whilst at Freiberg I dissolved 25 lbs. of zinc for the purpose of extracting the indium, and, although I did not propose to make an accurate quantitative determination, I worked as closely as I could on such a large scale. My result, however, was only 0.008 per cent. This difference may arise from the fact that Dr. Winkler's zinc, being a year older than mine, was not manufactured from the same blende. The method I adopted for the extraction of the indium is that given by Winkler in "Erdmann's Journal für Praktische Chemie," 1865, No. 1. In dissolving the zinc in hydrochloric acid a small quantity of the metal must remain to keep the indium from dissolving; a metallic spongy residuum is thereby obtained, which contains all the "precious metal," but consists chiefly of lead, with small quantities of iron, arsenic, and cadmium. This residuum is dissolved in nitric acid, and the lead got rid of by the addition of sulphuric acid. Through the filtered solution, which contains a great deal of free acid, sulphuretted hydrogen gas is conducted, whereby arsenic and cadmium are precipitated. After filtering, the solution must be boiled, to drive off the sulphuretted hydrogen, nitric acid or chlorate of potash being added to oxidise the iron. This, together with the indium, is then precipitated by ammoniac, which must be added in excess, in order to dissolve any zinc that remained in the first residuum. The precipitate, after being well washed, is dissolved on the filter in warm dilute acetic acid, and sulphuretted hydrogen passed through the solution. By this means sulphide of indium is obtained, which, however, is invariably mixed with a little iron. After re-dissolving this precipitate in hydrochloric acid, re-precipitating with ammoniac, and treating as before with acetic acid and sulphuretted hydrogen (an operation I repeated three times), I obtained pure sulphide of indium. According to Winkler, this sulphide still contains iron, and he recommends the following method for purifying it:—He dissolves the precipitate in hydrochloric acid, and obtains a solution in which the iron is present as protoxide. To this solution he adds carbonate of baryta, and the indium is thrown down perfectly pure. This is one of the characteristic properties of oxide of indium—the only instance, I believe, of a protoxide being precipitated by carbonate of baryta. Richter assured me that by this method a little indium remains with the iron, and, of course, if every care is not taken to obtain protoxide of iron in solution—that is to say, if any sesquioxide were present—this latter would be thrown down with the indium. The reduction of the pure oxide can be effected by means of hydrogen gas, in the usual way. Indium is, however, so volatile that this method is attended with some loss. Another mode consists in heating the oxide in a charcoal crucible with carbonate of soda and borax, and then fusing with the addition of the cyanide of potassium. By simple fusion with the latter the oxide is only reduced to a metallic powder.

The atomic weight of indium, according to Reich and Richter, is 464.15 (O=100) or 37.128 (H=1), which figures Dr. Winkler found rather high. He gives, as the result of several trials he made, 418.9 (O=100) or 33.918 (H=1). The determination was effected by dissolving the pure metal in nitric acid, precipitating the oxide with ammoniac, igniting, and weighing. The specific gravity of indium in a granular state is 7.11 to 7.14; that of the hammered metal is 7.277, at a temperature of 20.4° Celsius (68° Fahr.). Its colour approaches that of platinum; it has a fine metallic lustre, which it retains in the atmosphere, and even in boiling water. It is much softer, and more malleable than lead. On charcoal before the blow-pipe the metal fuses readily, and imparts a blue colour to the flame. The charcoal is covered with a deposit of oxide of a dark yellow colour, which becomes much lighter as the oxide cools. Indium dissolves slowly in hydrochloric acid; on the application of heat the solution is readily effected, and hydrogen is given off; it dissolves easily in nitric acid. The protoxide appears to be the only combination of indium with oxygen. The colour is that of straw; after ignition, and when in lumps, it appears darker, and is translucent. When heated it becomes brown, but this colour gradually disappears as the oxide cools. It dissolves with difficulty after ignition in cold acids; if heat is resorted to the operation is made easy. The hydrated oxide forms a white voluminous precipitate (very like alumina), which is totally insoluble in solutions of potash and soda and in ammoniac. The oxide imparts no colour to the blow-pipe fluxes; when fused with microcosmic salt and tin a grey bead is the result. Sulphuretted hydrogen precipitates sulphide of indium in an acetic acid solution; it is of a fine yellow colour, which turns to red-brown when dry. The presence of strong acids hinders the reaction of sulphuretted hydrogen, but not that of sulphide of ammonium. The precipitate obtained with the latter is insoluble in an excess of the re-agent; when gently heated, however, the solution is complete. On cooling, the sulphide of indium reappears, but this time it is white, and probably hydrated. Chloride of indium is easily obtained in white crystalline scales, by passing dry chlorine gas through a mixture of oxide with charcoal. It is very volatile, and readily absorbs water when it dissolves. All the salts of oxide of indium, as far as they are known at present, are colourless. The carbonate is white, crystalline, and granular when precipitated in acid solution by means of carbonate of soda; it is insoluble in an excess of this re-agent. It dissolves in an excess of carbonate of ammonia, but reappears if the solution is heated to ebullition. Phosphate of indium is white and voluminous; the oxalate is crystalline. A white precipitate is obtained with ferrocyanide of potassium. Sulphate of indium crystallises with difficulty. The same may be said of nitrate of indium in aqueous solutions; this latter crystallises readily, however, in acid solutions, forming bundles of prisms. The indium spectrum is characterised by a beautiful blue line, which is seen to the greatest advantage when chloride of indium is used, or a solution of the oxide in hydrochloric acid; the colour lasts longer when sulphide of indium is made use of. All salts of indium impart a blue tinge to the flame of a "Bunsen's" lamp. Prof. Schrotter, of Vienna, after comparing the indium spectrum with that of the sun, has arrived at the conclusion that this blue line does not coincide with any dark line in the sun's spectrum, and that, therefore, according to Kirchhoff, the atmosphere of the sun does not contain indium. The blue rim corresponds exactly with No. 2523 of Kirchhoff's scale. There is also a white line in the indium spectrum, but not nearly so intense as the blue line. It coincides with a strong

Fraunhofer's line, and, as near as possible, with No. 3265-8 of Kirchhoff's scale. For those who like German, I will mention the papers from which I draw most of the above results; they are "Erdmann's Journal" for 1865, Nos. 1 and 15, and the "Berg und Hüttenmanische Zeitung," 1864, No. 17. F. GILLMAN.

IMPROVEMENTS IN TIN DRESSING.

SIR,—Your correspondent, Mr. Anthony, has, in my opinion, hit the right nail upon the head in his remarks in last week's Journal upon the improvements in Tin Dressing, when he recommends that the mechanical appliances for this purpose should be adapted to facilitate the action of the law of gravitation; and it affords me much pleasure to see a practical man, which I assume Mr. Anthony to be, taking such a common-sense view of the matter, as it encourages me to hope that the system of tin dressing which I suggested in the *Mining Journal* of Oct. 29, Nov. 5 and 19, and Dec. 3, 1864, and which involved the very principle now advocated by Mr. Anthony, may at some future day be found of some importance in the economy of Cornish mining, although it has hitherto been passed over in silence. If I wished to construct a machine which should take cotton, wool, or flax in its raw state at one end, and deliver it at the other end a finished piece of calico or damask, I must expect such a machine to be exceedingly complicated, for it must include a cleansing machine, a carding-machine, a roving-machine, a spinning-machine, and finally a loom; but in the dressing of the ores of tin one thing only has to be provided for, and that is the action of gravity. The means of providing for this action are already in use in every tin mine, only they are employed in the wrong place—as a final operation instead of a first operation.

If Mr. Anthony turns to the papers I have referred to, he will find I have suggested the introduction of a machine "dolly tub," similar to that now in use at some Cornish mines, without the packer, but with the addition of a tube in the centre of the bottom, fitted with a plug or valve, through which the tin might be discharged as it falls to the bottom, and of a vertical opening in the side, through which the floating waste might escape by means of its centripetal force, or its tendency to fly off from the centre. This waste might be received into a cistern closely fitted to the tub, in which the coarse waste would immediately be deprived of its motion, and sink to the bottom, whence it might be taken away by means of an opening closed by a valve, thus leaving the finest waste to flow over the top. If such an apparatus as this received the ores direct from the stamps, the separation would be more readily and completely effected than by any method now in use. The machinery would be self-acting, requiring almost no attendance, and might be driven by the engine or wheel which works the stamps itself. The different products could each be carried to points where any after processes which may be necessary could be easily applied. I congratulate Mr. Anthony on the view he takes of this subject, and agree with him in condemning the complicated machinery which is now employed at far greater expense, although much less effective, and hope if he has the power he will some day prove that the principle he advocates is the only true one.

Oct. 9.

WILLIAM RICKARD.

MECHANISM IN TIN MINES.

SIR,—Much has been said from time to time about tin-dressing and the abatement of cost connected therewith by the erection of machinery. In some mines machinery has already been put up at great expense, and at times to advantage—that is to say, when properly applied. If a machine can be set to work properly, it may be more regular in its action than handwork; but in many cases it is more hasty than good speed. The running it through the process seems to be more the order of the day than the slow, safe, and sure way that would be certain to save the whole of the tin. It may now be seen in many mines that the work, or tinstuff, on coming out of the stamps is submitted to a large stream of water, and so followed the whole length of the floors, until it escapes out of the floors and out of the sett, when it becomes the property of the lord of the land through which the river runs, and what is not caught by the different parties on its way to the sea makes its final escape into the ocean; but it must be remembered that a ton of tin in the slimes is worth more than a ton of tin in the stone in the bottom of the mine, and it has always been found that it is easier to let the tin run away before the stream after stamping than to get it from down in the mine. To commence dressing the work as it comes from the stamps, as is now practised in many places, is certainly wrong, as classification should be first attended to—that is, to separate the coarser from the finer, the rough or sandy part from the fine or slimy part, and the rough treated as such, while the fine or slimy part requires to be treated in quite a different manner; and without attending to this I am of opinion that dressing is all a failure. It may be easy enough to run the stuff through the water and call it dressing, and tell the adventurers they are saving on the dressing-cost so much; but the question is—Is the tin saved, and if so, how does so much find its way into the rivers, where so many are employed catching it in the rapid waters? It is a very prevailing opinion among old tanners that there is more tin lost than would pay the difference of labour cost, and when once out of the dressing-floors it is never caught to a good advantage afterwards. It seems there is a great defect in tin dressing, perhaps greater than ever it was. To prove this, let there be a small stamp engaged, and a portion of the tinstuff dressed there without machinery, and compare the cost and tin produced, so that each may be fairly tested, and if the small stamps saves as much more tin as will pay the extra labour cost, then must the machinery and what is called the improved plan of dressing be false. Those who speculate their money in mining should look at this, and not be led away by fine talk or fine appearances. A CORNISH MINER.

Oct. 6.

GUNPOWDER, AND NITRO-GLYCERINE.

SIR,—I have read with much interest a correspondence which has lately appeared in the *Mining Journal* relative to that new and powerful explosive material "Nitro-Glycerine," and perhaps you will allow me to give a short account of a fatal accident which occurred from its use on Oct. 5 at Llanberis. It appears that some blasting operations were being conducted under the superintendence of the local agent of the manufacturers of this dangerous compound in one of the tunnels in the quarry of the Glynrhonwy Slate Company. A series of holes, which had been prepared and charged with nitro-glycerine, were to be fired simultaneously by means of electricity, but from some at present unexplained cause one of the charges was not ignited. In such a case, whatever be the "explosive compound" in use, any attempt to withdraw the charge is an operation of the utmost danger, and it was wisely decided not to attempt so rash an experiment; but, unfortunately, the wisdom of the operators, who did not sufficiently allow for the dangerous character of the material, ended here. Another hole was bored in too close proximity to the unexploded charge. The man who was boring had been but a short time at work when, probably, from the concussion produced by his blows, the oil ignited, and the unfortunate workman was killed on the spot.

Not long since another serious accident occurred in the same neighbourhood. Some men were endeavouring to ignite a small quantity of nitro-glycerine which had been left in the bottom of a tin vessel, and not being able, with the means at their command, readily to do so, one of them, thoughtlessly, gave the vessel a kick, when, small as the quantity was, an explosion took place, shattering the tin and the man's foot with it.

Accidents from powder or gun-cotton are generally occasioned by some want of ordinary care on the part of the miners, but in that last week at Llanberis every precaution which would have ensured perfect safety, had powder or gun-cotton been used, appears to have been taken, and the rules issued by the manufacturers of the glycerine were carefully observed. The inference, therefore, is that though a charge of this "powerful explosive" may remove more rock at each blast than powder, or even than gun-cotton, and may, consequently, effect a saving in the cost of blasting operations, its use will have to be prevented, or, at all events, much delayed, by the owners of quarries who prefer the safety of their men to any pecuniary benefit obtainable from an economy in labour or material.

I make these remarks with no antagonistic feeling to new inventions, for I am convinced, from my own experience, that powder must give way to its more powerful competitors—gun-cotton and

nitro-glycerine; but before the latter can hope to compete with the former in supplanting their ancient rival, it must attain an equal degree of safety; its chemical properties must be much more fully understood, and the manufacturers must be able to obtain a more thorough command over its explosive powers than any they have yet been able to acquire.—*Oct. 11.* B. T. J.

EXTRAORDINARY DISCOVERIES—A NEW GUNPOWDER.

SIR,—Not long since the *Scientific American* made a not very flattering reference to the carelessness of the general press in referring to alleged discoveries and improvements in the mechanical arts, and pointed out the injury resulting both to the public and to the party for whose benefit the false statement is intended. It would have been as well had the statement been extended to general newspaper paragraphs upon scientific subjects of all kinds. It matters little whether the discovery in question be mechanical, chemical, or mathematical, the same utter disregard of probabilities and possibilities is constantly apparent. The subjoined extract from the *Morning Herald*, with reference to a new and impossible gunpowder, affords a striking confirmation of my statements:—

Every day some new discovery is being made in the instruments and appliances of war, and the last invention promises certainly not to be one of the least important. A Swiss inventor has discovered an explosive compound, which, we believe, has been offered for experiment to our War Office authorities. It consists of a powder the ingredients of which are as yet unknown, as they are the secret of the inventor. This powder is intended to be used only as a bursting charge for shells, or for explosive rifle bullets; in fact, it can be used as a charge for every species of projectile, and its force is so great that a bullet charged with it and fired from the ordinary rifle suffices to blow up the caisson of an artillery wagon. What its effect would be when forming the charge of the hollow projectiles of the heavier species of ordnance is as yet unknown, as it has not hitherto been experimented upon on a large scale, but, judging from that produced by the very small quantity of the powder contained in a hollow missile fired from the ordinary rifle, it must prove a terrible engine of destruction. Although possessing such formidable explosive qualities, this composition is, in its ordinary condition, one of the safest known, as it only explodes when the hollow projectile charged with it strikes some object when fired from a rifle or piece of ordnance; even then the shell does not burst till it has penetrated the substance against which it strikes. A bullet charged with this substance can be flung about and struck without any explosion resulting from the roughest treatment; upon being thrown into the fire the bullet will be fused, and no explosion ensues. Upon the powder being placed upon a sheet of paper, and a light being applied to it, it burns slowly and without noise, nearly in the same manner as would a similar quantity of common sulphur. The mode of using it is extremely simple, as it is simply poured into the shell till it is well filled with it, and the orifice through which it was introduced is then stopped up in the manner that seems most convenient—in the case of a rifle bullet, for instance, with a piece of wax. No fuse is required to determine the ignition of the shell. One of its most important qualities, however, is that by adding to or diminishing one of the ingredients the explosion of the shell, after striking, may be retarded or accelerated, so that in firing, we shall say at an iron-plated ship of war, it may be so arranged as to explode either between decks after having penetrated the side or in the side of the vessel itself, and the breach made by such a formidable mine would, most probably, utterly destroy or sink the vessel. It is to be hoped that such an extraordinary discovery will be duly enquired into, and there is little doubt that if it is, from experiments that have already taken place abroad, this new power of destruction will be an important addition to our land, and above all to our marine artillery.

Now, I do not for a moment attribute improper motives to those who aid in the promulgation of such fallacies, but the harm done to the inventors of improvements of utility can scarcely be estimated—there is too much sensation, and too little fact. One can understand a powder of formidable explosive power, consisting of a combination of ingredients, the names and proportions of which are kept secret by the inventor, but to suppose that a projectile can be constructed possessing such a delicate sense of touch that it declines to explode unless struck against a case containing gunpowder, is a little too much for credulity. That a powder might be contained in a projectile which when suffered to fall amongst gunpowder would ignite it is not improbable, but the alleged invention does not pretend to any such properties; it is claimed to be an explosive powder which, contained in a projectile, "may be flung about and struck, without any explosion resulting from the roughest treatment," yet it is declared that "a bullet charged with it, and fired from an ordinary Enfield rifle, suffices to blow up the caisson of an artillery wagon"—two statements which are still more irreconcilable, as the bullet is simply filled with the powder, and the end stopped "with a piece of wax." Of course, it is possible to imagine that "the roughest treatment" will cause the wax to fall out, and the powder to follow it, the condition of safety being thus fulfilled—the bullet being empty; but the description does not justify any such suppositions. As the Swiss inventor's object was to sell his rights; otherwise the whole affair would have the appearance of being open to very grave suspicion with regard to its truthfulness.—*Oct. 9.* No GASCON.

IMPORTANCE AND PROSPECTS OF OUR MINERAL INDUSTRY.

SIR,—The reduction of the rate of interest to $\frac{1}{2}$ per cent., and the general belief that the rate will lower, have, combining with various other influences, acted powerfully upon the share and metal markets. There has been from the same causes an extensive revival of the general trade of the country, which should always be studied in connection with mining prospects, as no branch of industry can flourish without a demand for metals of some kind, or of every kind, increasing in proportion to that prosperity. At present the general aspect of commercial affairs is promising. Notwithstanding the want of confidence prevailing in reference to finance and railway companies, the tone of public confidence, and the rate of production of British products generally, are rapidly improving, and the trade in metals and the ventures in mines must follow suit. It is observable that the favourable state of things in this country has but little affected the prices of metals in that great market, the United States, with the exception of iron, over which a gloom hung for a long time as dense as that which hung over it at home. Tin—a word which is as a spell to every Cornish and Devon man—is at last rising in price, and likely to rise still higher. The 28th of September has passed, and the Banca sales have taken place. It does not appear that there is any reason to apprehend that the market will be glutted, and when the full effect of those sales is realised the price of tin in England will undoubtedly go higher. The price of copper has improved since the Bank relaxation greatly, and the standard is still going up. There can be no question that this will stimulate production in Chili, Australia, and elsewhere, from whence we derive our copper supplies. The day is not far distant when from a vast area of Canadian territory rock copper will be drawn, but it is sufficiently distant to allow us to believe that the price of copper in our markets will not be very soon affected by the fact. There are two great markets which will, probably, consume at such an advancing rate that production will barely keep pace with it—India and the United States. The former country, notwithstanding the Bengal rice famine of the present season, is prospering, and the consumption of copper in three distinct forms must go on. The vast extension of the Indian railway system, in progress and contemplated, will necessarily employ in locomotive and other material a great deal of copper. The extensive provinces opened up by those railways will afford markets for all our manufactures used in India, and of these copper is an important one. For domestic utensils, implements and even ornaments, a great demand for this commodity arises as the country is opened up. The masses of the people prefer copper money, and for this purpose much of our export of that metal to India hitherto has been employed. Thus, in several ways the consumption of copper in India must go on and increase. The disturbed state of the southern portion of the United States, and the unsettled aspect of politics and parties in that country, impede the more rapid development of prosperity, but whenever the Southern States settle fairly down to the pursuit of the great industries peculiar to them, the demand upon our metal markets will be immensely stimulated.

It is an encouraging fact that notwithstanding the shock sustained by the mining interest in Cornwall and Devon during the late panic, so that the shares of even the Great Devon Consols receded to an extent no one previously could have believed possible, the value of Welsh shares was well maintained, and that of the Cardiganshire mines especially was borne up well through all the confusion and despondency of the period. It is not merely the holders of property in mines that partake of the prosperity of metal and other mineral productions. The mining interest is now proved to be the greatest of all the industrial interests of the country. Mr. Leoni Levi has published some valuable information in connection with all the productive industries of the country, and as his calculations are based upon

the Census returns, and he follows the arrangements of the Census map, which points out and defines the limits of the chief industries of the country, it is easy to test his calculations. Mr. Levi falls into some strange mistakes for so eminent a political economist and statistician, such as the assertion that there are more employers of labourers than labourers, which is probably a misprint. Mr. Levi hardly states a fact when he alleges that machinery and beasts of burden monopolise nearly all the work of unskilled labour. It is the tendency of all modes of economising labour by machinery in particular direction to create a demand for labour in other directions. At no period in the progress of Great Britain was there so great a demand for unskilled labour as there is now. The increase of railways, buildings, and public works has created a vast demand for more labour, and undoubtedly this increase in public works of all kinds has arisen from the general economy of production which science has enabled us to maintain. If, however, we cannot agree with Mr. Levi in everything, we entirely concur with him in his mineral statistics, but he does not point out the full consequence of the facts. He briefly but efficiently shows the great variety of employment created by mineral operations in the descriptive paragraph—"Working in minerals or extracting riches out of the bowels of the earth are the coal and iron, copper, tin, and lead miners, coal heavers, stone quarriers, brick makers, navvies; and working in the product of mines are the earthenware, glass, and salt manufacturers, jewellers, brass, and iron manufacturers." Mr. Levi does not, however, point out that these miners and workers in mines create a vast demand for agricultural produce, give enhanced value to land, and are great consumers of our staple manufactures.

Mr. Levi publishes, or rather republishes, by summarising the Census tables, the exact number of persons engaged in the principal occupations, and although he does not, as he might have done, point out the fact that mines and mining give more employment than any other productions whatever, even the cotton manufacture, such is plainly the case from his own tables. Setting aside agriculture as out of the comparison, Mr. Levi assigns for England and Wales a little more (25,000) than one million of workers in textile fabrics. Now, we have all been accustomed to assign to the latter trade the ascendancy, but that trade, together with wool, worsted, lace, silk, and linen, employ just about one million of persons. The cloths of Leeds, Halifax, and Huddersfield, the carpets of Kidderminster, the worsteds of Bradford, the silks of London, Manchester, Macclesfield, Leek, and Coventry, the linens of West Yorkshire and Blackburn, the lace of Nottingham, the crapes of Norwich, the hosiery of Leicester, all added to the cotton-mills, employ this million. Deduct the workers in these industries from the million, and it will be reduced to less than half a million who find employment in spinning cotton yarns and weaving and printing cotton cloths. Now, according to the same authority, there are workers in iron, brass, tin, copper, zinc, lead, silver, and gold 422,000 persons, stated in round numbers. But he allows that there are besides engaged directly in mining the enormous number of 330,000 persons. Let it be recollected that these vast numbers are exclusive of all who are engaged in the production of coal, stone, salt, earthenware, and glass, which of course are mineral. The number so employed reaches more than a quarter of a million of persons. The makers of machines and tools, who of course work nearly exclusively in metals, amount to close upon 120,000. All that are engaged in carriage factories, dockyards, and arsenals, as artificers of metals, are excluded from the above statistics. The result of a fair induction from these statistics is that the workers in mines and the products of mines are more numerous than all those engaged in the mills and factories of the great North of England and of all England and Wales. That the mighty cotton trade does not give bread to one-third the number to which mines and minerals afford it. That neither the cotton nor any other textile manufacture is the staple trade of England and Wales, but that mining and work in mining products constitute the grand staple of our country, employing more than a million and a quarter of persons. May this great interest flourish as it deserves, and engage the capital and ability of our people more and more.

Graham-house, London.

THOMAS SPARGO.

NORTH WALES SLATE DEPOSITS.

SIR,—Several letters have appeared lately in the *Liverpool Mercury* respecting the slate quarries of Wales, some of the authors professing to be practical men; for my own part I think they know more of writing letters than of splitting slates—more of quarry names than of the nature of their rocks. The long discussion ended just where it began—in the display of words and vocabulary knowledge, without advancing any one point connected with quarrying. One letter appeared, however, which took no part in the discussion, but shows how important some late discoveries of slate veins are likely to be. I differ in some minor things with this writer, but the extent of the veins as described remains as indisputable facts. I do not coincide with "Quarryman" as to the purity of the slate veins below the great Penrhyn veins, as seen at Ogwen River; nor do I think that he is correct as to the Pant Dreiniog Vein having a downthrow at Llandegai Mountain. I have traced the Penrhyn veins myself to Afon-y-Gaseg within the last few weeks, but I agree with "Quarryman" that all traces of them are lost on the west side of Llanberis lakes. It is a downright folly to attempt to prove that these veins have been found at Nantlle, nor can they be traced further eastward than Afon-y-Gaseg. "Quarryman's" remarks about the dark slate vein seen at Tyddyn-du, near Penrhyn Quarry, is quite erroneous, the vein outcropping at Peniser Nant Froncon has no connection whatever with Gallyt-y-Llan or Tyddyn-du, the latter is covered by a great igneous rock, about 400 yards south of Penrhyn Quarry.

In his remarks about the immense body of slate at Fynon-y-Fidder, or what is now termed the Bangor green and blue slate, I coincide. The width of these veins are even greater than those of Penrhyn, and the slate has all their leading features. The green vein is so extensive here as to enable this fortunate company to sell the slate at the prices of the ordinary blue. The three veins, drab, blue, and green, are upwards of 800 yards wide, with a height of ground to form from twelve to fifteen galleries. These being on the opposite mountain, face to face, as it were, to Penrhyn Quarry, and destined at not a very distant period to become one of the most productive quarries in Wales, will greatly add to the importance of the fast rising town of Bethesda. But, before proceeding further, let me caution this company to pray continuously, "Lead us not into the temptation of trusting the development of this great and valuable slate deposit to civil engineers, as, alas! is too often the case now-a-days in North Wales, and that at the cost of disregarding men who really and truly understand quarrying operations—failure and loss to the proprietors." We have had shameful instances of failures within the last few years, and that chiefly through the entrusting of quarry openings to those who had not the remotest ideas of quarries or quarrying. One instance in particular I shall name. In a quarry in Carnarvonshire, where the vein is extensive, the throw for refuse excellent, and the split and cleavage nowhere surpassed, 15,000 ft. has been uselessly spent, the quarry stopped, and the company ruined. This quarry had good blocks, regular feet and backs, with slanting fissures and an extraordinary good cleavage, withal it turned out a complete failure; whereas it ought to have been paying at least 2000 £ a year profit, with half the capital, judiciously outlaid. The management of the quarry was confided to a man who talked largely of his long experience, &c., but who at this present moment cannot tell which way a block will split, although he has had the sole control of a large capital, and, through his ignorance, wasted it; and, worst of all, would saddle the blame on his Welsh workmen, who had nothing to do in the matter but carry out his instructions.

The Merionethshire slate veins, embedded in the Silurian formation, cannot possibly hold out, as "Quarryman" naturally observes, covered, as they are, with such heavy tops, to produce such an enormous quantity as they have within the last few years. As they are driven forward to the mountains, that they will become year after year more confined and smaller is evident, and proven by known facts. One of the back veins, several yards wide near the surface, in about 90 yards depth, is only 2 feet. The slate at Festiniog, in great depth, gets small in grain in consequence of the great pressure above, and is so condensed and brittle that little can be comparatively expected from it. Also the clay-slat, so regular in the upper galleries, in depth is greatly contorted, and falling in all instances below the regular angle, so observable near the surface and above the

pure slate rock. These things speak for themselves, and lead us to expect a complete change in the production; slowly, it is true, but, nevertheless, not the less certain. The future generations of Welsh quarriers must either turn their faces to the Arfonian hills, and there excavate the Cambrian perpendicular veins, or to the Far West, to compete with the yet unskilful Yankee. I shall have the pleasure of calling your readers' attention to this subject again.

Oct. 10.

ROCKMAN.

THE SLATE MAKING PRICE LIST—DIP OF SLATE VEINS IN MERIONETHSHIRE.

SIR,—In the Journal of Sept. 29, Dr. Bower exhibited a marked tendency to blame me in neglecting to inform him and your readers that the slate making price list given in his pamphlet, entitled "Slate Quarries as an Investment," is not generally adopted. But rather than favouring me with his rebuke, I am of opinion that he should have expressed his gratitude for the information, as his knowledge on the point was so limited.

The dip of the slate veins in Merionethshire vary from nearly horizontal to nearly vertical, and I quite agree with the doctor that the subject possesses great public interest—far too great, indeed, to be treated cursorily, as it involves, as he very properly remarks, the consideration of more or less profitable working, according to the dip. But what reasons had he to suppose that the subject had been hastily treated by me? That it is usual to guess the dip by the rack of the eye is no proof that I did so. The truth of it is that it is a most difficult thing to convince a man against his will. But, however, I repeat again what I have stated before in the Journal, that the dip of the slate vein at the leading quarries in Merionethshire is about 45° (I say about, because it does not always run with mathematical regularity); and I will also give the dip of a few more slate quarries in this county within the parish of Festiniog. Mr. Greaves's quarry about 41°; Bower's quarry about 42°; Diphwy's from about 39° to 42°; the New Graig Ddu about 5°; Drum Quarry and Penlyn Quarry I guess to be much the same as the New Graig Ddu. The dip of the above quarries (the last two excepted) have been tested with an instrument especially designed for that purpose.

Festiniog, Oct. 9.

R. R.

THE SLATE TRADE IN CANADA.

SIR,—I have read with much pleasure the very interesting series of papers published from week to week in the Journal from Mr. Joseph Kellow, on "The Slate Trade in the United States," and shall be glad if you will permit me to direct attention also to Canadian enterprise in connection with the same industry. The parties working the properties there are doing well in slates, and I am glad to say the residents are finding money for their development, and the prospect of being well remunerated for their outlay are as favourable as could be desired. The subjoined are some particulars of the quarries best known in the district of St. Francis.—*Dublin.*

W. J.

At Walton Quarry, Melbourne, Canada East, the band of roofing slate is in immediate contact with the summit of the Serpentine, and dips about S. E. 80°. Mr. Walton commenced opening a quarry upon it in 1880, and found it necessary, in order to gain access to the slate, to make a tunnel through a part of the Serpentine. The fall from the position where the quarry is worked to the level of the stream is upwards of 400 feet. The manufacture of slates commenced in the spring of 1881, and the specimens exhibited in 1882 at the London International Exhibition obtained a first-class medal, and also took the first prize at the Provincial Exhibition between 1880 and 1884. It is now being worked most successfully by an incorporated company, with a capital of \$40,000. To show that slate as a covering is well adapted to resist the influence of a Canadian climate, the roof of the seminary at the corner of Notre Dame and St. Francois Xavier streets, in Montreal, has been covered with them for upwards of 100 years, without any perceptible deterioration; and two houses built on the Esplanade at Quebec, and roofed with slates 50 years ago, have not required repainting. The Cleveland slates are a continuation of the Melbourne band; a quarry opened here in 1854 produced the slates to be of a superior quality. A company is proposed to be formed to work them extensively. The Sherbrooke slate, in the township of Orford, comprises 300 acres, and is held in fee simple; it is about 6 miles from the city of Sherbrooke, and about 2 miles from the Grand Trunk Railway, the road to which is on an easy descending grade. This band of slate rock is supposed to occupy the entire extent of the property, and to have the same geological position as that of the Melbourne Slate Quarry, and to be characterised by the same properties and conditions. The direction of the cleavage is north, 43° east, and the dip S. E., at an angle of 77°, or 13° from the perpendicular. A large stream of water appears to pass through the centre of the band of workable slate, a most valuable adjunct to the economical working of the quarries. About 11 years since some slates were taken from an opening on Lot 2, and have proved to be durable, &c., although taken from near the surface.

The rock splits very freely, with thin smooth laminae. The colour is a dark blue, and very uniform, and the slates appear to be in every respect as good as those at Melbourne (the excellent character of which has been thoroughly established). The surface is undulating, and the slate rock is exposed throughout the ravine from 100 to 150 feet above the stream, to work it in benches or galleries. As everything connected with the economical working of the quarries is highly favourable the Sherbrooke Slate Company has been organised, with a capital of \$200,000, which the promoters consider ample to work and develop the property. The demand for good roofing slate in this province and in the United States is very great, and constantly increasing, and where, as in this case, the facilities for working and shipping the slate are so great the profits of the business are certain to be very large.

THE LEAD MINES OF CARDIGANSHIRE.

SIR,—The Cardiganshire lead mines have been worked as far back as the time of the Romans, and evidence of this working is found in the mines of the Rheidol Valley, and in other parts of the great Cardiganshire range of mountains. We find throughout modern history that large fortunes have been made, and large fortunes are now being made, in the mines of Cardiganshire upon a very trifling outlay, for it is well known among mining circles that whenever an old mine has been judiciously re-opened by honest, practical adventurers, they have reaped rich rewards. In proof this may be cited the Cwmystwith, East Darren, Grogwinlan, Logylas, Frongoch, Goginan, Cwm Erfin, Cwm Sebon, and many other mines too numerous to mention; and it really appears strange that during the recent speculative mania, when people rushed to place their money in undertakings of even the most doubtful character, but little attention was directed to the prolific field of investment afforded by the Cardiganshire mining district. "Every dog has his day," and, probably, now that the finance and banking mania has subsided, money will find its way into the old legitimate channels for developing the resources of our country; and Cardiganshire, and other mining districts well deserving the attention of speculators, will come in for their proper share of attention at the hands of capitalists.

The mines of Cardiganshire lie in the Cambrian formation, or Lower Silurian of Murchison, estimated by geologists to be five miles in thickness, from which it is certain that mines will be found in it at very great depths. The deepest mines yet found in it are only about 180 fms. below the surface, and very few reach the sea level. On the other hand, in Cornwall the lodes in the slate or killas are opened upon from 250 to 300 fathoms below sea level, and even at that great depth are, in most cases, returning immense profits to the adventurers. The whole of the Cardiganshire district has been the seat of great geological influences, the vast power of which can only be imagined by an inspection of the yawning chasms and rent surfaces of the rock upheaved by the agencies at work beneath the crust of the earth, and which are now clothed with verdure, and are nursing rivers which render the scenery unsurpassed by any in the British Isles. The direction of the great champion metallic lodes of Cardiganshire is nearly east and west, and they run about a mile apart from north to south. Those worked upon extend from the Dyliffe and Esgairhirr mines on the north to the great Nant-y-Mwyn on the south, a distance of 40 miles on the magnetic meridian, or 5° to the west of it running northwards. They are chiefly opened upon by means of levels; and, water-power being abundant over nearly their whole extent, steam is hardly ever applied for pumping, winding, crushing, or dressing purposes. By this means the cost of working the Cardiganshire mines is much lower than that of Cornish mines, beyond which must also be considered the saving of capital in erecting the ponderous steam-engines in use for mining purposes in other districts.

The mines in the valley of the Rheidol and its immediate neighbourhood are in the centre of the great divided mines of this rich district, those to the north are the well-known Dyliffe, Cwm Erfin, Goginan, and East Darren Mines, returning large profits to the adventurers. To the south are the Lisburne mine, Frongoch (the richest lead mines in the county) Grogwinlan (a celebrated old mine), Glogfach, and several other highly productive mines, making good fortunes for the investors in them.

On the north bank of the River Rheidol is one of the mines of the Cardiganshire Lead Mining Company, known as the Grian Rheidol Mine; this mine has lately been unwatered, and the company's agents have been vigorously putting it into good working order, and they are now commencing to send ore to market. This mine affords a good example of the success attending the re-opening of old mines, and working them with the appliances which modern science has discovered. The agents report that they have in the bottom of the mine a splendid lode, fully 18 ft. wide, and producing lead ore rich in silver, worth over 3 tons to the fathom. Great rocks of ore are now being drawn to the surface, and will compare favourably with produce of any mine in the county. This lode forms a junction with another lode at about 14 fathoms distance from the workings above alluded to, and it is said that the manager is cross-cutting to this lode, so as to intersect it near the junction; should it prove as valuable as the lode now being worked upon, the Grian Rheidol Mine will undoubtedly become one of the most productive in the district. Surely such success as this should induce capitalists to invest their money in similar undertakings.

Travelling eastward from the Grian Rheidol Mines, we cross the River Rheidol at the far-famed Devil's Bridge, and then passing westward along the southern side of the Penrhyn Valley, we reach the Rheidol on our road to Aberystwyth, where we come to another mine, belonging to the same company, called Pant Mawr Mine. Here once existed, probably, the greatest field of Roman lead mining, and

from appearances it is evident that immense quantities of lead have been taken away by the ancient miners, who seem to have selected their site of operations with great judgment, inasmuch as this mine is nearest to the seat of power causing the great rent in the geological formation of the country, to which may be attributed the immense richness of the Frongoch, East Darren, and other mines similarly influenced by the upheavals of the strata, which have affected the country for many miles. We learn that the Pant Mawr Mine is likely to reward the investors in it for its re-opening; it seems that on the lode now being worked good discoveries have been made, which have resulted in the erection of extensive machinery by the company, and already 30 tons of lead ore have been sent to market, and the price per ton which it realises will, no doubt, be forwarded to the *Mining Journal* for publication.

There are two other lodes close to the great lode worked upon at Pant Mawr; these lodes have never yet been seen below surface, but from the backs of them the ancient miners have taken away large quantities of lead; these lodes form a junction in the property belonging to the Pant Mawr Mine, and it seems a pity almost that they should be left unexplored, if the proprietors have capital at disposal to give them a trial; if, however, their capital is limited, it is better for them to make certain of developing one good mine than grasping objects beyond their reach, and, perhaps, losing all, a fate which has been met with by many mining companies, who have provided insufficient capital to carry out their projects, and whose unlucky shareholders have now the mortification of seeing them in other hands, paying dividends of 50 and 100 per cent., under proper management, and an adequate outlay of capital. There can be no question but that the gradually decreasing value of money in the open market will attract the attention of investors to mining speculations, and they will do well by examining closely into the advantages which may be attained by a judicious selection of Welsh lead mines for putting their money into.

There are some hundred millions of railway debentures which will presently fall due, and which it will probably be impossible for the different companies to get renewed. Railway investments will be greatly depreciated by this circumstance, irrespective of the anticipated demand for an increase in the rate of wages, which is daily becoming a more vexed question than ever, and the time may be looked forward to when railway companies will be subjected to strikes among their employees in the same way as coalowners and ironmasters are periodically visited, the only machinery necessary to bring about this state of things is the introduction of a few "delegates" from some of the Trades' Unions upon any of our systems of railway, and the matter is very soon accomplished, the dividend of the particular railway company being very considerably curtailed thereby. No cure can be invented for this state of things so long as Trade Union Societies are permitted by the Government to exist.

Railway stock, among many other kinds of securities, does not, therefore, appear to be likely to command much favour in being applied to the absorption of the large sums of money liberated weekly by the public of this country. Under these circumstances, mining enterprise will undoubtedly have great attraction very shortly, and the sun will again shine through the clouds which have for so many years hovered over one of the most important branches of the industry of "that nation upon whose dominions the sun never sets."

VIGILANS.

PROSPECTS IN THE CARADON DISTRICT—WEST CARADON.

SIR,—It is very gratifying to know that my predictions relative to West Caradon are being confirmed, a rise of several pounds per share having already taken place; and I again reiterate that the present price is not a tithe part of its prospective value. Here is a mine having 14 lodes, all of which have been productive in the adjoining mine (South Caradon); profits to the extent of more than 250,000 £, have been divided among the shareholders, while at West Caradon about 100,000 £, have been divided. The workings in the former mine, which are on the same lodes, are considerably deeper than those in the latter, and still producing large quantities of mineral, hence it will be seen that in West Caradon there is a considerable amount of high ground standing. In the 104, on Jope's lode, they have gone over ore ground for 40 fathoms in length, varying in value from 15 £ to 30 £ per fathom. The 116 and 128 fathom levels are being driven to come in under this ground, which are only a short distance back from it. I stated in my last that all the ore here makes what is termed the little cross-course, and until they get through it in the 116 and 128 fathom level ends, there is not much expected from them; but seeing that the former is within about 4 fathoms of the desired object, and that the 128 will also soon be up to it, I regard these points as being very important. A good lode in one of these ends only will suffice to put this mine in the Dividend List.

The 90 fm. level west, on Allen's lode, has been extended west a great distance, and a cross-cut is being driven out south from it to cut Jope's and other lodes in the unwrought ground. In this cross-cut several lodes have already been met with, all producing mineral; one lode more particularly I was very much pleased with, it being larger than the generality of lodes in this mine; it is full 6 feet wide, but nothing has yet been done, save cutting through it, and from its appearance at this point, I believe there are thousands of tons of copper above this level as well as below it, and I regard this one lode alone as being of greater value than many mines in this county, selling at the rate of 20,000 £. This cross-cut was started for the ostensible purpose of cutting Jope's lode, and is now within a few fathoms of it. I cannot better state my conviction of the result of its accomplishment than by saying that out of all the profits made in the mine, about 40,000 £, was made from this lode alone eastward; suffice it to say, that the said cross-cut is opening out one of the most valuable pieces of ground to be found in the county. Another point of interest is a cross-cut at the 170 fm. or bottom level south, to cut Downing's lode, which, in the level above (the 155) produced from 20 £ to 30 £ worth of ore per fathom; this object will also be accomplished in about a month, when I look forward to something valuable being brought to light. From the many lodes operated on in this extensive mine, yet I consider it still in its infancy; only about half the mine has yet been wrought, while in opening up the various lodes in the new ground its future may be anticipated to become a great and lasting dividend property. It can, therefore, be easily understood by the most uninitiated that there is a wide margin for large profits on a purchase at present low prices.

St. Day, Scorrier, Oct. 10.

CHARLES BAWDEN.

THE ROCHE MINING DISTRICT.

SIR,—In my last letter on this district I made mention of the SAVATH HILLS, and that it was to be brought out by a public company, to work the china-clay and tin, together with the iron lode, which is of great size, and very productive. I am to-day informed that operations have been commenced on the tin lodes, a party of men having taken them on tribute at 12s. 6d. and 10s. in 1 £, as soon as stamping power is erected on the mine (either by water or steam), having at the present time a distance of from two to three miles to carry the stuff to get it stamped. I hope this will not be of long continuance, if the lodes are found as productive as reported; this will, however, be a trial, and I think the company should not in the least despair if the tin does not turn out to their expectations, as they have a very valuable property for iron and china-clay. I am also glad to inform you that another concern for china-clay, iron, and tin has commenced operations at the old WIRIAL UNION, worked some years since, by Capt. John Webb, for tin. The same engine that was removed from the mine is now being taken down and removed back to the house that it was taken from. This sett is adjoining the Savath Hills to the west, on the same course of tin lodes, and also on the same bed of china-clay, the iron lode being a parallel one west about half a mile. This property is to be worked by a party in London, and, like the Savath Hills, is a good and extensive mine. If mining companies would but turn their attention to these kind of things in this district, instead of draining and working old tin mines, and losing thousands of pounds, they would be well paid for their outlay, there being at the present time no safer investment than in the china-clay and iron ore mines. In my next letter I will mention a few, giving the quantities raised, the cost per ton of getting it, and the profit after delivered in the market, &c., free on board.

I was informed this morning that the water was forked to the 12 fm. level at the SOUTH CORNWALL, and a fine course of tin discovered at the end on the north lode. I was in hopes this would have given the shareholders some prospect of success, and all would have gone on well. But, alas! Sir, how often are the most sanguine disappointed. While writing I hear that all operations are suspended, the engines stopped, and all the men discharged, at SOUTH CORNWALL, CLEER'S HILL, and at the CARTEW. What the cause of it is I am not informed; perhaps it may be that their capital has been expended in the purchase of the CLEER'S HILL and CARTEW, by, as it is reported, giving 10,000 £ for it! I, however, hope the shareholders will carry out the SOUTH CORNWALL, as I believe it will pay them for their outlay, if properly expended on the mine, at the present price of tin; and if they have paid too dear for the CARTEW and CLEER'S HILL, let them "paddle their own canoe" in the SOUTH CORNWALL, and I believe that a very prosperous voyage is before them.

Oct. 8.

ARGUS.

OPORTO MINING COMPANY (LIMITED).

SIR,—Your correspondent, "Shareholder," had better call a meeting in Portugal, and determine what they will do: they may either take legal steps there, and elect themselves out of jurisdiction of the English courts, or they may oppose the winding-up; or, what I should recommend as the best course, an amicable arrangement of all parties concerned, to do that which is best for their interests. Your correspondent mistakes English law if he thinks they are compelled to have "their money forcibly wrested from them for any other than legitimate mining purposes."

Serradella is a valuable silver mine, and, although the huge outcrop of the lode is nearly all carried away by the road authorities, and the external mine does not show so advantageously as it did before that happened, still the mine is the same in depth; and should the present shareholders not wish to find the money necessary to work it, and are willing to offer a good bargain, I have many friends ready and anxious to invest in such a first-class undertaking.

Strand, Oct. 10.

JOHN CALVERT, C.E.

PURE WATER FOR LONDON.

SIR,—This subject is becoming more and more attractive of general interest, as it so decidedly involves the maintenance of general good health, and the prevention of disease in the shape of fevers and other epidemic disorders, as cholera, typhus, &c., which latter are plainly attributable in a great measure to the use of bad water; and that water (even when of good quality) is so limited in quantity, that a sufficiency for decent, wholesome purposes is restricted, or kept from access, by what is termed "regulations," which involve or compel habits of apparent uncleanness and sloth among the working classes, while it is, in point of fact, almost impossible with a small supply of water to keep homes and clothing clean and wholesome. It is to be hoped that something of a really practical nature and character, in the shape of improved water supply, will be produced by the exertion of boards of health, district officers, and associations, now forming to assist and co-operate with present water companies in supplying a bountiful, wholesome stock of pure soft water. I have been favoured by insertion in the Journal of letters, on Aug. 4 and 11, and Sept. 1, on my proposed Artesian Wells, to draw supply from the lower greensand, and trust a patronage and adoption of my plans will be soon secured. I have noticed, in last week's Journal, that a rival scheme has been suggested by Mr. R. F. Frowde of Harrow, who evidently calculates on drawing from the upper, and not the lower greensand. All I hope and trust is that the best plan will be chosen, and quickly adopted.

Dorset-place, Holloway, Oct. 11.

W. AUSTIN, C.E.

depolariſation of the *Northumberland* by the process invented by Mr. EVAN HOPKINS has caused considerable interest to attach to it; the essential points of the discovery are, therefore, subjoined. The depolarising process is done on the same principle as we adopt in the depolarisation of steel magnets; but instead of using horse-shoe magnets, electro-magnets and batteries are to be applied, as being more powerful and expeditious in depolarising such a large mass of iron as the hull of an iron ship. In order that this principle of depolarisation may be the better understood, he refers to the system of making and un-making magnets. In the process of making magnets, the magnetic material of the compass is affected near it without being disturbed from their meridional parallelism, or affected by deviation. Steel bars in this state are like iron bars in their normal state; they may be placed together without having any tendency to adhere to one another, but the moment any one of them is polarised a disturbing action is set up, and the bars will act like magnets, and will adhere together. The same prepared steel bar after having been rubbed over from south to north by a horse-magnet is now converted into a strong magnet. In polarising any given piece of iron, due care must be taken to place the south end of the horse-shoe magnet towards the intended north end and the contrary way for the south end. In the polarising of the bar will be destroyed; and if this be delicately done, the bar will be restored to its original normal state. If continued longer than necessary the south end will become a north, and the north end a south pole. It is on this established principle in magnetism that Mr. Hopkins proposes to depolarise the hulls of iron ships, and destroy their influence on the compasses. Before he

From what has been said in the preceding articles, it will be clear that Cornish mining differs from almost every other branch of industry. While it is to a very great degree speculative in its character, it is also a most important avocation, requiring deep insight, large and distinct knowledge, and consummate skill. So much is this the case that it justly claims rank among the lower sciences. From its early growth to the attainment of its present dimensions it has naturally claimed a large share of public notice, for without the metalliferous deposits of tin and copper which Cornwall has so long supplied to the world, civilisation that the arts must have held a much lower position than they now do. In order that the readers may have a more distinct and comprehensive view of the entire subject, we subjoin in a few words a synopsis of the past history of mining, together with brief remarks on the present condition of the mining classes.

Up to the middle of the last century the Cornish tinners seem to have been the sole possessors of the market. Before that time the Dutch had imported any considerable quantity of Banca tin into Europe, and many more years elapsed before the latter article bore any large proportion to the Cornish supply. Still, after no long period prices were greatly affected by the introduction of foreign tin, and at the time of the French revolution the associated tinners of Cornwall had recourse to an artificial method of sale, which in the end brought them into great trouble, and materially injured their trade. A scheme was invented by the East India Company was to be supplied with tin for exportation at an exceedingly low price, the loss thus incurred by the tinners being met by the increase of price demanded at home for the remaining portion of the stock. This system was continued until after the battle of Waterloo, and at one time so much tin was thus sent to the East, that an English tin miner could scarcely find tin in the market at Calcutta utterly unsaleable, made a small purchase of tin very low figure, brought it back to London, and sold it at a large profit. For some years there had been an increasing demand for tin from the continent of Europe, the price rose rapidly, and the associated tinners refused to sell to the East India Company, except at a considerably advanced price, and the company only made two small purchases subsequently. During the next twenty years the production of Cornish tin did not greatly increase, but the importation of

Thursday in this week is, however, most important, the lode in the 45 east having advanced in one day from 301. to 501. per fathom; and, if the concurrent testimonies of various agents and inspectors are to be relied upon (and in the aggregate they cannot be disputed), the "Prince of Wales" will become a distinguished member of the mining list, and help onwards other promising Cornish concerns, since those experienced minds who have uniformly, and for some time past, predicted its present success do not stop there, but allot a place for it as one of the most prominent of British mines up to many times its present value. The writer, however, is not at liberty to indulge in making public all the anticipations of the future, and, in the use of such data, must be content to leave the great mine at no distant period. But, for all, where is the wonder that another EAST CARADOC should spring out of its former obscurity of 6d. or 1s. per share? which was notoriously at one epoch of its history the position of the above mine, although it ultimately reached 511., or more, per share; whilst for the unrivalled DEVON CONSOLS, it is equally well known that 20s. per share (the

HOLLOWAY'S PILLS—COLD AND DAMP.—The varied temperature of the body and accordingly varying the body frames, and every precaution is required to preserve the feeble from positive disease. Holloway's Pills cleanse the blood from all impurities which have entered it either from foul air or obstructed perspiration. This is a grand point both in preventing and curing all illnesses and invaluable to a delicate constitution, because the corruptive circulation which weakened and destroyed the springs of life, thus purified by these pills must necessarily support and invigorate them. In connection of the lungs, the throat, the chest, the stomach, the bowels, colds and hoarseness, Holloway's pills prove the best remedies for repressing all urgent symptoms, and the surest preventive of subsequent sufferings.

BRITISH MINES.

the 50 east is suspended, to admit of a rise (Paul's) being put up in the back thereof. In James's rise, in the back of the 50 east, on No. 6 lode, the lode is 1 ft. wide, worth 1 ton of copper per fathom. In Paul's rise, in the back of the 50 east, on No. 6 lode, the lode is $1\frac{1}{2}$ ft. wide, worth for length of rise (9 ft.) 5 tons of copper ore per fathom. In the 40 east, on No. 6 lode, the lode is 1 foot wide, producing good stones of copper ore.

or the pictures or bargains since last reported on, and they still continue to well.

WYDYR PARK.—W. Smyth, Oct. 9: There is no change to notice in either in Gwyn Lliffon dale since last reported. We have not yet cut the east lode.

ALLENBEAGLE.—W. Bawden, Oct. 6: At Pinniger's engine-shaft, sink-

ons of ore per fathom. The lode in the 70 west is large, and produces saving
ck for tin. The 60 west is worth \$1. per fm. for tin and copper. The 50 west
looking promising, and continues to produce about 121. worth of copper ore
fm. The 40 west is unproductive. The winze in bottom of this level is worth
fathom for copper and tin. The 90, west of Hill's, is without change. The
ces and pitches are looking much as usual.

thorled with our print force of men, it we hope that this difficulty will only be overcome. The machinery is working well. The lode in the bottom of the Piazza Nuova level is 8 feet wide. The lode in the back of the same level is 5 feet wide. The lode in the stopes of Cava Vecchia level is 6 feet wide.

VAL ANTIGORIA.—James Mitchell, Crodo, Oct. 4: The amalgam on hand amounts to about 80 ozs., which will be distilled, and the gold forwarded. The winze now sinking in bottom of adit level north is down 10 metres, and have gone through ground producing over 1 oz. of gold per ton of ore; and, judging from present appearances, we are expecting a further improvement. The stopes in the bottom of the lode are 1 to 15 ft. in width, with a level average ore. The plans and specifications for all the machinery required have been sent on to Messrs. Harvey and Co., of Hayle, for estimates.

LUSITANIAN.—Sept. 25: Palhal Mine: The lode at Taylor's shaft is worth 2½ tons per fathom. River shaft is down to the 80, and the men are put to drive west to communicate to the 80 end; we have about 9 or 10 ft. more to drive to complete it. The 60, west of Oak shaft, is composed of flookan, spotted with lead. In the 100, east of Taylor's, the lode is composed of quartz and stones of lead. The 100 west of Taylor's is worth ¾ ton per fathom. In the 90, east of Taylor's shaft, the lode is worth 1½ ton per fathom. The 80 fm. level east of the 90, composed of quartz. In the 70, east of River shaft, the lode is composed of river flookan. The 28, west of Perez's shaft, produces good stones of ore. The 18, west of same shaft, yields stones of ore. In the adit west the lode is composed of flookan and quartz. The 90, east of slide lode, is composed of country and a little quartz. The 70, east of slide lode, is worth ¾ ton per fathom. In the 28, east the lode produces small stones of ore. The 50, west of Taylor's shaft, yields small stones of copper ore. The lode in No. 61 winze is worth ¾ ton per fathom. The 50, west of Taylor's shaft, is worth 1½ ton per fathom. The 40, east of the cross-cut of Taylor's, has become much harder than it was. The ground in the cross-cut, north of River shaft, is of a hard gneiss. The ground in the 38 cross-cut is more favourable than in the others. —Stopes: The lode in the stopes above the 18, east and west of Fronseia's winze, is worth 1 ton per fath. The lode in the stopes above the adit, west of Perez's shaft, is worth ¾ ton per fathom. The lode in the stopes above the 28, east and west of No. 58 winze, is worth ¾ ton per fathom. The lode in the stopes above the 60, west of Joaquin's winze, is worth ¾ ton per fathom. The lode in the stopes above the 80, east of Joaquin's winze, is worth 1 ton per fathom. The lode in the stopes above the 50, east of Norte's winze, is worth 1 ton per fathom. The lode in the stopes above the 70, east of Tavorra's winze, is worth 1 ton per fathom. In the stopes above the 60, east of Jacinto's winze, the lode is worth ¾ ton per fathom. In the stopes above the 80, west of Machado's winze, the lode is worth ¾ ton per fathom. In the stopes above the 60, west of Dia's winze, the lode is worth 1 ton per fathom. In the stopes above the 70, west of Campino's winze, the lode is worth 1½ ton per fathom. The lode in the stopes above the 50, west of Lauranco's winze, is worth ¾ ton per fathom. —Carvalho Mine: The lode at the incline shaft is composed of quartz and spots of lead. The 30, east of incline shaft, is worth ¾ ton per fathom. In the 30 west the lode is composed of munde, quartz, and stones of lead, but not enough to value. The 20, west of incline shaft, is worth ¾ ton per fathom. The 10, west of incline shaft, is worth ¾ ton per fathom. We are getting into ground that leads us to suppose we are not far from the caunter lode. In the stopes above the 20, east of incline shaft, the lode is worth ¾ ton per fathom. —Figueiredo Mine: The ground at Henty's shaft is still soft and crossed with flookan and other branches.

UNITED MEXICAN.—Guanaxuato, Aug. 21: Mine of Jesus Maria y Jose: The best works, those of San Nicolas, continue to produce the usual quantity of good ore, and of an average ley of about 10 marcs per monton, or about 55 ozs. per ton, but there is very little of the rich quality, which gave from 20 to 30 marcs per monton, or about 120 to 165 ozs. per ton. In the level of San Carlos, the deepest in the mine, and which has been driven a distance of 1400 ft. from north to south, a pozo has been opened, which shows the ore still making downwards; and, as ore appears in the level along its whole extent, there is reason to believe that a large quantity will be met with as other pozos descend. Unfortunately, the cost of extraction is increased by the depth, and the ley of the ore has hitherto been too low to pay expenses. Much ore also remains in the reserves left in the old workings at a more moderate depth, but these are thrown down rather slowly, from the necessity of filling up with attle (rubbish). The 4000 cars of ore, which were the last, were the last of the mine. The mine has 4000 cars have been extracted for this purpose. The buques in the mine have obtained 1170 cars, which sold for \$1500, half that sum being the credit of the mine. The result on the month of July has been a loss of \$795, gold not included, and shortly two rapas will be received. —Mines in the Guadalupe de la Oscura District: The work of ventilation near the adit of El Camacho has been completed, and last week several buques went to work, and obtained some very good ore. I think there is a probability of the chief expenses of these mines being recovered. The work of ventilation near the adit of El Camacho, and Encinillas, and effecting a communication with it by means of an old workings is going on, though slowly. The outlay on these mines for the month of July amounted to \$1434.

NEW WILDBERG.—Jas. Sanders, Oct. 6: Carter's Shaft: The lode in the 90 east is without change. Two men are stoping the bottom of cross-cut to ascertain if the ore holds down in the bottom. The 80, east of Davey's, is unproductive; the same level west is worth ¼ ton per lachter; the stope above the level 2½ tons; and the stope above eastern drive 1 ton per lachter. Conder's sink, below the level, is worth 1 ton per lachter. The cross-cut south of Erbette's shaft is going on, and the lode is now the ground is clearing out the old shaft, and the lode is the lode. Michael's Shaft: The 70 west is yielding a little coal, and the lode looks promising. We believe the cross-cut south is through the lode, and the men are, therefore, put to drive north to prove the lode in that direction. —Beck's Workings: We have not yet met with any ore in the 70 cross-cut or any water. The water in the winze is so quick that the men will not work in it; but as soon as the cross-cut is extended far enough we shall rise from the level to meet the winze. We have this day sampled Sept. ore, bids for which will be received on Tuesday, the 16th inst.

BRITISH AND AMERICAN COAL FIELDS.

Among the freight engagements for London by one of our packers a few days since was 400 tons white ash lump coal, taken from a Pennsylvania mine. Such a transaction may fairly be considered as a practical exemplification of the axiom about "carrying coals to Newcastle," while, at the same time, it revives the question of the probable duration of the English supply, and whether, at some future period, England may not be compelled to import largely of coal from the United States. Our vast and but partially developed coal fields may prove to be the element which will make this country, first the equal, and ultimately the victorious rival, of England, in those manufactures for which she is at present renowned in all the markets of the world. Some months ago the Geological Society of London published statistics in relation to the future British coal supply which created a profound feeling of anxiety in the minds of English economists, throwing new light upon the relative prospects of the two nations. It was stated by the most scientific authorities of that distinguished body that the consumption of coal continues to increase at the ratio of the past few years, the supply that lies within 4000 ft. of the surface will be exhausted in less than a century.

The wonderful progress in commerce and manufactures which England has made during the last half-century is not due so much to her mechanical skill or to her commercial enterprise, as to her extensive coal beds, and the smallness of the cost incurred in developing their contents. Manchester and Liverpool and the wealthy district of which they are the twin capitals, are popularly supposed to owe their eminence to cotton, but the magnet which has attracted to them the stars of the industrial revolution, and the source of the wealth which has made them millions of spindles become as valuable as if the sole which they were designed to manufacture into fabrics was not available. In smelting ores, in iron manufactures, in producing gas, in generating steam for use in every mechanical art to which it is applicable, and for export, Great Britain has been drawing upon her coal supply more lavishly with every succeeding year, until the day has been believed by her political economists to be visibly approaching when her drafts will be dishonoured, or paid at a price that will put an end to competition with her benevolent rivals. Chance, or scientific research, may discover other means of obtaining heat, or the coal supply may be increased by the discovery of economical methods of making and applying steam may be invented; new sources of heat may be found, or a novel motive-power be brought into use. By one of these events, or by several combined, the evil day may be retarded when English collieries may become exhausted; and unless the problem, "how to arrest the growing consumption of coal without checking the industry of the country," shall be solved within the next 50 years, England's commercial importance, the estimation of some of her own statesmen, will have begun to decrease before the coal supply of the United States can be brought to bear against the extent of the American coal fields, and a comparison of their value with those of Great Britain, will not be uninteresting.

The United States coal deposits have been divided by geologists into four principal fields or tracts. The first in importance, by reason of its enormous extent, is the Alleghanean, or Great Central, reaching from Tuscaloosa, in Alabama, through East Tennessee and Kentucky, thence into West Virginia, Maryland, and Pennsylvania, where it apparently terminates, but afterwards reappears in the British Provinces of New Brunswick and Nova Scotia. This basin, as far as it has been traced, was known many years ago to embrace the whole of the United States of 60,000 square miles, of which 45,000 square miles, or 28,000 acres was an unbroken seam. This tract was again subdivided by an English commissioner, who was, some years ago, dispatched by the British Foreign Office to examine and report upon the American coal supply, into eight minor divisions representing various qualities of bituminous and semi-bituminous coal. The second division underlies nearly the whole of the States of Illinois and Indiana, and in extent, quality, and proximity to the surface, is little less important than the Alleghanean. The third division, which embraces by almost the same lines those which form the boundary of the States of Mississippi and Alabama, and which is covered by the State of Michigan. The Chesterfield, a bituminous coal field of small area, not far from Richmond, Virginia, is interesting from the fact that it contains the oldest collieries on this continent; it was this district which furnished for many years the whole home supply. Very little progress has been made in this locality, however, considering the convenience of the field. The great detached basin of anthracite coal in Pennsylvania, from the valuable peculiarities of its production, has been the most attractive field for enterprise and investment, in many years. Some of the earliest and most complete coal statistics estimate the total coal field in the State at 150,000 square miles, or 96,000,000 acres; but later authors have fixed it at 200,000 square miles, or 128,000,000 acres—that is to say, the coal formations in the United States equal one-fourth of the surface of the twelve States under which they lie. This estimate gives to our country an area equal to three-fourths that known to exist in the whole of the coal-producing countries of the world including Great Britain. And these coal basins, running lengthways from the Northern Lakes to Alabama, are so well distributed that their contents can be carried to the coast by the waterway of the Ohio and Mississippi rivers.

Great Britain and Ireland are believed to have about 19,000,000,000 tons of marketable coal, which would give them over 200 years' supply at a moderate rate. But, Great Britain only consumed 31,000,000 tons in 1845, and had more than doubled that consumption in 1858, having reached 65,000,000 tons, and in 1863 had again increased her demand on the collieries to 86,292,375 tons, and

been large, and of a promising character; but looking at the position we are in, that is, about to enter the elvan course in the 120, in the engine-shaft, and the large extent of ground we have yet to explore in the western part of the mine, in and near the elvan course, together with the ore ground laid open in the eastern part, we can with confidence say our prospects never looked better for the last four years than at present."

At Nangiles Mine meeting, on Oct. 5, the accounts showed a debit balance of 1867. 7s. 2d. Capt. Rowe and Dower say—"We have five pitches balance on tin, copper, and munda, at an average tribute of 12s. in 17. We work now on the mine about 2000. worth of munda, which we have not been able to sell, the cost upon which is all paid—this we hope to sell in a month or two." The pursuer having expressed a wish that his salary be reduced 3s. 3s. per month, it was agreed to; and, in consequence, it was resolved that the fee for the registration of transfers be a perquisite to his office.

At South Wheel Seal meeting, on Oct. 4, the accounts showed a debit balance of 7827. A call of 21. per share was made. Capt. Thomas, Bath, and Thomas say—"We expect in the ensuing four months to cut the middle lode in the 60 cross-cut south, and to drive the 60 east under the winzinking below in the 60, where the lode has a very promising appearance, and to sink the engine shaft 30 fms. deeper, the whole being objects of interest worthy of prosecution."

At West Rose Down Mine meeting, on Thursday (Mr. W. Fawcett in the chair), the accounts for the three months ending August showed a credit balance (when all calls paid) of 1681. 13s. 3d. A call of 10s. per share was made. Capt. John Truscott reported that from the success of the adjoining mine, he had every reason to expect similar results when the lodes are fairly developed.

At Carn Camborne Mine meeting, on Thursday (Mr. M. Phillips in the chair), the accounts for the three months ending August showed a debit balance of 1521. 15s. 1d., and a balance of assets over liabilities of 6317. 6s. 11d. balance of 6d. per share was made. Capt. John Truscott reported that the mine is opening out as well as they can expect, and that their future prospects are of a very encouraging character.

At Sortridge Consols Mine meeting, yesterday (Mr. William A. Thomas in the chair), the accounts for the four months ending August showed a loss of 6921. 8s. 9d. The credit balance (exclusive of 2901 shares, the property of the company) was 6511. 8s. 11d. A call of 2s. 6d. per share was made. The reports of the manager and underground agent urged the advisability of continuing the sinking of the shaft to the junction of the lodes, and the report of sinking the shaft (who inspected the mine for a large shareholder) stated that, looking at the character and productiveness of the copper lodes above the 50, good results might be expected at the junction, and seeing the depth of the shaft, he considered it advisable to continue the sinking to the proposed level (the 140).

At Dale Mine meeting, on Tuesday (Mr. Procter in the chair), it was resolved, upon the proposition of Mr. Bartram, seconded by Mr. James, that the directors be empowered to issue the 7700 shares purchased from Messrs. Johnson's estate, together with the unallotted shares, making 10,396, such shares to be offered to the existing shareholders; and that in the event of a "rejection" of the offer, the shares to be applied for a meeting will be called, to take into consideration the propriety of winding-up the company, with a view to its re-construction, the property upon which the shares are to be allotted are—1s. on application, 1s. 6d. on Feb. 1, and 1s. 6d. on May 1; and provided the two last instalments be paid on or before Nov. 1 a discount of 2½ per cent. be allowed on the whole amount. Letters from the lord were read, by which it appeared he had consented to give up the royalty until the mine paid its costs, and with regard to the dues already owing (since January, 1865), he agreed to reduce the amount one-half, provided the mine should be at the end of one year from the present time. A report was read from Capt. Nines, to the effect that the Pipe vein improved as the exploration advanced northward, and there was every probability of a considerable improvement on approaching the millstone grit. The mine having improved, and presenting favourable prospects of further improvement, and the lord having made such an important concession, induced the directors to believe that the whole of the unallotted shares will be readily applied for.

At the Quebrada Land, Railway, and Mining Company (special) meeting, on Thursday (Mr. Stook, M.P., in the chair), the scheme proposed by the directors for the reconstruction of the company was unanimously agreed to. Details appear in another column.

On the Stock Exchange there has been a tolerable demand for mining shares during the week. The following quotations were respectively recorded in British mining shares:—East Caradon, 7½, 6½, 6½, 5; West Caradon, 12½, 14, 13½, 14½; Great Laxey, 19½; West Chiverton, 61; Clifford, 7½, 7½; East Lovell, 9½; Great Wheel Vor, 20; Marke Valley, 4. In Colonial mining shares the prices were:—General, 20, 20½; Yudanamutana, 3½; Cape Copper, 9½. In Foreign mining shares the prices were:—Chontales Gold, 3½, 3; Cobre Copper, 2, 2½, 2½, 1½, 2½, 2½, 1½, 2; Pontgibaud Silver, 7; St. John del Rey, 48, 47½, 47, 48½; Pastarena Gold, 1½; Capula Silver, 1½.

The Bank of England return for the week ending on Wednesday evening affords an exact reflection of the state of monetary affairs generally—there is an abundance of cash for immediate wants, but owing to the enormity of the offences connected with joint-stock companies which have come to light, there is an utter want of confidence in everything speculative, and permanent improvement can scarcely be hoped for whilst the almost daily exposures take place. It is well known in commercial circles that there are still several establishments of reputed solidity whose stability is very questionable, and until these are cleared away the present unsatisfactory state of affairs is likely to continue. In the ISSUE DEPARTMENT there is shown a decrease in the "notes issued" of 434,170, represented by a corresponding decrease in the "coin and bullion" on the other side of the account. In the BANKING DEPARTMENT there is shown a decrease in the "rest" of 965,427; and a decrease in the "securities" of 6,748; and an increase in the "other deposits" of 244,988;—341,736; leaving a total decrease on the liability side of 649,929. On the asset side there is shown a decrease in the "other securities" of 791,753, and an increase in the "public securities" of 200,000,—591,753, which, deducted from the decrease on the liability, gives a decrease in the total reserve of 49,166.

The China Steam-ship and Labuan Coal Company, referring to the proposed re-construction, state that the benefit to the shareholders is obvious, as it reduces the extent of their liability without impairing the security of the creditors. The directors' confidence in the ultimate prosperity and success of the company is strengthened and confirmed by the reports which they continue to receive from their very zealous agents at Labuan and other parts of the East. The value of the coal has been increased, and the active measures already taken have considerably increased the supplies, which at present are by no means equal to the demand.

At Palmer's Shipbuilding and Iron Company meeting the report stated that, notwithstanding the disturbance to trade in the North of England by the constant recurrence of strikes, an available balance has been realised of £1,642. A dividend at the rate of 12½ per cent. per annum was agreed to, amounting to £2,417; the sum of 30,000, was placed to reserve, and £625, remains to be carried forward. It was mentioned that plans are under consideration for reducing the nominal amount of each of the shares of the company.

COAL MARKET.—The fresh arrivals this week reach 152 ships. The demand for coal has continued fairly active, and, upon the whole, prices close at an advance of 3d. per ton on this day week. Jetton Wallsend, 21s. 3d.; Haswell Wallsend, 21s. 3d.; East Harlepool Wallsend, 20s.; Hartlepool Wallsend, 20s. 6d.; Harton Wallsend, 19s.; Tunstall Wallsend, 19s.; Pittington Wallsend, 18s.; 11 cargoes unsold; 35 ships at sea.

CONTRACT FOR COAL.—The Admiralty Commissioners require contracts for the supply of 4000 tons of coal—one-third North of England and two-thirds South Wales—for the Cape of Good Hope.

COAL IN INDIA.—Considerable interest has been felt in India in the discussions on the English coal deposits, and the appointment of a Royal Commission on the subject. Dr. Oldham, the director of the Geological Survey of India, has been called on to report to that Commission as to the probable extent of the Indian coal measures. The latest statistics show that about 400,000 tons were raised in 1860 in Eastern Bengal alone; but the best find in all India, Assam, was not worked; nothing came from the great "potholes" in the valley of the Nerubudda; the Kurubari field is about to be mined up by the chord line of the East Indian Railway, and Mr. Blanford, of the Geological Survey, has just reported the Panch coal field, discovered by that accomplished geologist, in the Hissar, in 1852. In the Chitradra district of the Central Provinces, to be the thickest and, probably, most extensive coalfield. Manufacturing industry, the demands of steamers, and the requirements of railways are all increasing so rapidly in India, that it is of vast importance she should be independent of England.

THE IRON TRADE.—Messrs. Shaw and Thomson (Oct. 10) say—"The iron trade for the past fortnight has been unusually lifeless. The most noticeable incident has been connected with the dispute between masters and men in the North of England. The men at Consett works have accepted the reduction proposed by the firm, and the leaders of the Trades' Union, who had come there to prevent the judicious submission of the men, were obliged to leave a neighbourhood in disgrace. Within a few days the men at the other works will, no doubt, also give way, and so far as the masters can, the works will be kept in operation. Unless, however, a much better feeling is soon imparted to the trade than at present prevails it, the question of a further reduction must shortly come uppermost. A few orders have been given out during the past fortnight for American rails, and the price of these may be quoted at 51. 15s. to 61. 10s. at works. In pig-iron the tone is dull, and prices are rather disposed to drop. Stocks are very heavy; and the reaction from the late unnatural inflation will be severe and prolonged. Bar-iron has been in moderate request, and prices are sustained; but no special activity has been observed. The demand for castings has been good; so also have the orders for girder and bridge work. The spring demand from British North America promises to be very satisfactory. Considerable orders could be obtained for rails from the United States, but the principal enquiries are burdened with conditions of payment which hinder sales. Our home trade for rails is not very promising; the discredit which has been cast upon railway companies will induce them to order as sparingly as possible, while the manufacturers will be careful in giving indefinite credits. "Shipbuilding for the merchant service is still in a very bad state, and almost all orders are being given out. The activity, however, in Government yards is considerable; and foreign orders for armour-plated vessels are coming gradually forward. The Board of Trade returns, made up to the end of August, exhibit a depressed state of the iron trade for the eight months. Whilst other important articles of export have shown an increase in value from 10 to 20 per cent. compared with last year, iron shows a falling off of 14 per cent. This is the more remarkable when it is borne in mind that values during the first three months were higher this year than last. Undoubtedly one reason of this is, that the constantly recurring strikes and lock-outs in this country have caused foreign buyers to look less to England for their supplies. This fact,

and the consideration that the wages' question has become so precarious, will, no doubt, put a stop to any further increase of production for some time to come. On the whole, the iron trade, though in a very despondent state, may be considered as having reached the worst, and recovery must gradually take place.

THE COPPER TRADE.—Messrs. Vivian and Younger (October 12) write—"Beyond a few forced sales at low prices there have been no transactions. Both buyers and sellers seem very well content to wait the course of events. There are buyers of ore and regulus at 15s. per unit, and of Chilian bars at 761. per ton, but no sellers at these rates. At the close there was, perhaps, a slightly better feeling in the general market; in any case no one seems to anticipate lower prices. From France the accounts are indifferent, though holders there are not now pressing sales on this market, as was the case some months since.

GEOLOGICAL SOCIETY OF CORNWALL.—At the annual meeting of this society (Mr. Charles Fox in the chair), the secretary, Mr. S. Higgs, Jun., read the Council's report, which congratulated the members on the near completion of the new building, which is in every respect not only worthy of the fine collection of minerals, but worthy of the society and its founders. The architect reports that the museum will be ready to receive the cases early in the spring, and strenuous efforts should be made by the friends of the society to make up the deficiency in the building fund, which is about 5000l., before taking possession. The Council laid the deeds of conveyance, duly executed, before the members, and, again, recording the obligation this society is under to Miss Elizabeth Carne—(applause)—who has thus so munificently handed in the conveyance of the freehold free of expense. The Council suggest that a suitable memorial should be placed in the new museum—(hear, hear)—expressive of thanks for the gift; and to record the circumstance under which she was induced to give the site—that it should be a memorial of her late father, Mr. Joseph Carne. Acting on the suggestion, Dr. Le Neve Foster has been engaged during the past year in re-arranging and classifying the minerals and fossils preparatory to their removal. Dr. Foster has adopted the arrangement used by Mr. Warrington Smyth, which, though less truly scientific than the purely chemical classification of Berzelius, adopted in the British Museum, is, nevertheless, far more convenient for the miner, smelter, and practical man, and has the advantage that it does not differ very materially from the present arrangement. The curator fears that the catalogue will not be finished before the completion of the new rooms.

Contract for Coals for the Cape of Good Hope.

CONTRACT DEPARTMENT, ADMIRALTY, SOMERSET HOUSE.

THE COMMISSIONERS for Executing the Office of Lord High Admiral of the United Kingdom of Great Britain and Ireland do hereby give notice that on TUESDAY, the 23rd instant, at Two o'clock, they will be READY TO TREAT with such persons as may be willing to CONTRACT for SUPPLYING and DELIVERING into store, at Her Majesty's Naval Yard at Simon's Bay, Cape of Good Hope, FOUR THOUSAND TONS of COALS. One-half of the coals to be shipped in the month of November, and the remainder in the month of December next. One-third of the quantity to be shipped in each month to consist of North of England coals and two-thirds of South Wales coals. All the coals to be fit for the service of Her Majesty's steamships and vessels.

A form of the tender and conditions of contract may be seen in the lobby of the Storekeeper-General's Department, Admiralty, Somerset House.

No tender will be received after Two o'clock on the day of treaty, nor will any be noticed unless the party attends, or an agent for him duly authorised in writing.

Each tender must be addressed to the secretary of the Admiralty, and bear in the left-hand corner the words "Tender for Coals for the Cape of Good Hope," and must also be delivered at the Department of the Storekeeper-General, Admiralty, Somerset House, accompanied by a letter signed by two responsible persons, engaging to become bound with the person tendering in the sum of 25 per cent. on the value for the due performance of the contract.

By order, ANTONIO BRADY,

Registrar of Contract and Public Securities.

Contract Department, Admiralty, Somerset House, Oct. 12, 1866.

MEXICO.—A MINING ENGINEER and METALLURGIST. Resident in the city of MEXICO, is READY TO ACCEPT COMMISSIONS for the INSPECTION of MINING PROPERTIES, and REPORTING THEREON. For particulars, address "J. P. S.," MINING JOURNAL office, 26, Fleet-street, London, E.C.

MINING ENGINEER.—WANTED, a THOROUGHLY COMPETENT MINING ENGINEER, to PROCEED SHORTLY to MEXICO, to examine and report on an important silver mining property in that country. He must have had considerable experience in silver mining abroad, and one who has already been in Mexico would be preferred. Engagement would be for not exceeding six months.—Address, with full particulars, to J. H. MURCHISON, Esq., No. 8, Austinfriars, London.

WANTED IMMEDIATELY, at the EAST HOLYFORD COPPER MINES, TIPPERARY, IRELAND, a smart AGENT, salary 10l. per month.—Apply to the secretary, Mr. C. H. WALL, 12, Grafton-street, Dublin.

WANTED, by a gentleman in the Midland Counties, an APPOINTMENT for the SALE of IRON, COAL, and IRONSTONE, either on commission or purchase. Terms, cash if necessary. Quality must be first class.—Apply to Mr. JAS. SAUNDERS, Metal Broker and Commission Agent, Darlington-street, Wolverhampton.

MANAGER, OR SECRETARY.—A GENTLEMAN, of 20 years' experience in the Railway, Mining, and Monetary Markets, SEEKS an APPOINTMENT. High testimonials.—Address, "Scrip," MINING JOURNAL office, 26, Fleet-street, London.

A GENTLEMAN having an extensive connection with merchants, manufacturers, and others, would be GLAD to UNDERTAKE the SALE of PATENTED ARTICLES or INVENTIONS, upon commission.—Apply to Mr. W. T. RAWLE, patent and mining agent, 8, Small-street, Bristol.

GREEN SLATE QUARRY.—WANTED, ONE or TWO PARTNERS to WORK the LARGEST known VEIN of GREEN SLATE in WALES. The quality and colour are unexceptionable. The advantages for working are such as have scarcely, if ever, been equalled. The quarry is within 150 yards of the station of a railway recently constructed, and is within 2 miles of an excellent shipping port.—For terms and particulars apply to the owner, Mr. THOMAS HARVEY, Manager of the Prince of Wales Slate Quarry, 33, King-street, Cheapside, London, E.C.—11th October, 1866.

COPPER MINE.—TO CAPITALISTS.—TO BE SOLD, BY PRIVATE TREATY, and on most reasonable terms, a very VALUABLE COPPER MINE, situated in the North of England. For information and full particulars, apply to Mr. ELIAS J. BEON, Mining Engineer, Swansea.

TO CAPITALISTS, BRICKMAKERS, AND OTHERS.—TO BE SOLD, OR WORKED UPON ROYALTY, a VALUABLE PATENT for MACHINERY for MAKING BRICKS, by which two-thirds of the time and one-third of the usual cost may be saved.—Apply to W. T. RAWLE, Patent and Mining Agent, 36, Prince-street, Bristol.

CHONTALES GOLD MINING COMPANY.—A CIRCULAR containing particulars relative to this company's mines, and explaining the position of the different classes of shares, can be obtained on application at the office of Mr. J. H. MURCHISON, No. 8, Austinfriars, London.

MESSRS. R. C. CLIFTON AND CO., SHAREBROKERS, ALDINE CHAMBERS, PRINCESS STREET, MANCHESTER. Mines inspected, and reports furnished. The best practical advice given to capitalists as to investments in mining. Bankers: National Provincial Bank, Manchester.

MR. WALTER TREGELLAS, 122, BISHOPSGATE STREET WITHIN, continues to deal, at close market prices, in all good sound DIVIDEND and PROGRESSIVE MINES, either for cash or the account. W. TREGELLAS is a BUYER of Wheal Mary Ann shares, Wheal Trelawny, and Great Wheal Vor shares.

SHAREHOLDERS IN PUBLIC COMPANIES desirous of avoiding calls and further responsibility will find purchasers on applying to Messrs. BARRETT AND CO., 75, LOMBARD STREET, CITY, and No. 20, SPRING GARDENS, CHANCERY CROSS. Stocks, shares, mining, and other miscellaneous securities bought and sold. Investment Review on application. Cash advances made.

MESSRS. ROBERTSON BROTHERS AND CO., STOCK AND SHAREDEALERS, 16, ABCHURCH LANE, LOMBARD STREET, E.C., Are prepared to BUY or SELL, at close prices, for cash or the fortnightly settlement, shares in East Wheal Lovell, Clifford Amalgamated, Great Wheal Vor, East Caradon, West Caradon, East Wheal Russell, Prince of Wales, Chontales Gold, Atlantic Telegraph, and Anglo-American Telegraph. Telegrams promptly attended to.

MESSRS. MCNEILL AND LONG, STOCK, SHARE, AND MINING DEALERS, 31, THREADNEEDLE STREET, LONDON, E.C. Bankers: Alliance Bank.

BRITISH AND FOREIGN INVESTMENT.—MR. THOMAS SPARGO, 224 and 225, GRESHAM HOUSE, OLD BROAD STREET, LONDON, E.C. TRANSACTS EVERY DESCRIPTION OF BUSINESS in the PURCHASE and SALE of SHARES in BANKS, CANALS, MINES, RAILWAYS, BRIDGES, INSURANCES, and ALL OTHER DESCRIPTIONS of BRITISH and FOREIGN STOCK.

MR. SPARGO has 20 years' experience of mining, ten of which he was engaged in practical mining, and ten years he has transacted business in mining shares and stock, at 224 and 225, Gresham House, Old Broad-street, City, E.C. Bankers London and Metropolitan and Provincial Bank (Limited).

RED LION HOTEL, TRURO.—An OLD-ESTABLISHED FIRST-CLASS FAMILY, COMMERCIAL, and POSTING-HOUSE. Very superior accommodation to Families, Tourists, Mining, and Commercial Gentlemen. Ladies and Gentlemen's Coffee and Private Sitting Rooms. Omnibus to meet every train. JANE DOBB, Proprietress.

TO MINING AGENTS AND DIRECTORS OF LEAD MINING COMPANIES.

MESSRS. WESTON AND COLLINGBORN, of No. 18, PETER STREET, BRISTOL, having fitted up an establishment at SWINFORD, near BITTON, BRISTOL, for the SMELTING and REFINING of SILVER-LEAD and the other qualities of LEAD ORES, are now prepared to PURCHASE by TENDER, or otherwise, LEAD ORES in any quantities that may be offered to them.—Swinford, near Bitton, Gloucestershire, Oct. 5, 1866.

WEST SHARP TOR MINE.—AN OFFER WANTED for a SHARE in this promising Mine.—Address, "A. B.," Mr. Rule's, 72, Farrington-street, E.C.

LANFAIR AND PRINCE OF WALES SLATE QUARRIES.—FOR SALE, SIXTY LANFAIR SHARES (43 paid), at £2; SIXTY PRINCE OF WALES SHARES (44 paid), at £3. These quarries, which will shortly enter the dividend list, are under the management of Mr. T. HARVEY, whose letters are to be seen in the MINING JOURNAL, passim. Address, "N. K. H.," MINING JOURNAL office, 26, Fleet-street, London, E.C.

SOUTH WHEEL LEISURE.—FOR SALE, from FORTY to FIFTY SHARES, at £1 7s. 6d. each. NEW CLIFFORD—FIVE SHARES, at £2 5s. each. Apply to "Executor," MINING JOURNAL office, 26, Fleet-street, London.

CHINA-CLAY.—FOR SALE, CHINA-CLAY WORKS in full work. Principals only treated with.—Apply to Messrs. KINSMAN and HOCKADAY, Auctioneers, St. Austell.—Oct. 4, 1866.

SUBMARINE WIRES AND CABLES.—ON SALE, about FIFTY MILES, sizes assorted, from ½ to ¾ in. diameter, at one-half the first cost, in perfect condition.—Apply to Messrs. GARNOCK, BIBBY, and Co., Hemp and Wire-rope Manufacturers, Liverpool.

FOR SALE.—TWO FIRST-CLASS VERTICAL DOUBLE-ACTING AIR-PUMPS, quite new, 16 in. diameter, 30 in. stroke, with gun-metal ground valves, metallic pistons, steel piston-rods, cross-heads, girders and brackets, surrounded by galvanised iron cooling tanks, both in thorough working order, but not required. Will work up to 60 lbs. pressure per square inch, or more if necessary. May be used as vacuum pumps. Apply to Mr. J. S. CAVELL, 25, College-hill, Cannon-street, E.C.

WABASH AND ERIE CANAL, STATE OF INDIANA, U.S.—HOLDERS of the UNPAID BONDS of this canal, issued by the State of Indiana, are REQUESTED to COMMUNICATE THEIR ADDRESSES, and the NUMBERS, AMOUNTS, and FULL DESCRIPTION of the SECURITIES held by them, to "K. L. M.," MINING JOURNAL office, 26, Fleet-street, London, E.C., preparatory to making some united effort to secure the payment thereof.

With the Journal of Sept. 29 was given a SUPPLEMENTAL SHEET, in which appears—A Report of the South Wales Institute of Engineers' meeting, at Cardiff—Comparative Systems of Coal Mining in the North of England and South Wales—Application of Iron to Pit-Head Framing and Engine Seats—Mineral Resources of Italy—What is Copper used for in India?—Cornwall: its Mines and Mining—Improvements in Boring and Blasting (Illustrated)—Japanese Alloys, &c.

LEAD ORES.				
Date.	Mines.	Tons.	Amount.	Purchasers.
Sept. 27	Stiperstones	50	£12 3 0	Weston & Collingborn
29	Bronfloyd United	40	12 15 0	Adam Eytton
Oct. 5	Great Laxey	100	22 11 6	Sheldon, Bush, & Co.
8	Frongoch	50	11 17 6	Burry Port Co.
	ditto	50	12 1 0	Runcorn Smelting Co.
	Cefn Brynno	50	11 12 6	Walker, Parker, & Co.
	East Darren	65	15 5 0	Panther Lead Co.
	Cwm Eriia	102	15 16 6	Adam Eytton
	Minaera	102	12 6 6	Walker, Parker, & Co.
	ditto	102	12 6 6	ditto
	ditto	86	12 8 9	Burry Port Co.
	ditto	72	12 7 6	Walker, Parker, & Co.
10	Pllynlimmon	60	11 17 0	ditto
11	Talargoch	98	13 4 0	ditto
	ditto	116	13 15 6	Adam Eytton
	Bryn Gwlog	45	12 17 6	ditto
	Trelogan	20	13 6 6	Walker, Parker, & Co.
	Great Rhosmor	24	12 6 6	ditto
	Pennant	10	11 16 6	ditto
	Parrys	9	12 2 0	Adam Eytton
	Dyfnwgwm	23	11 10 0	ditto
	Bwlchcoch	11	11 5 6	Walker, Parker, & Co.

BLENDE.				
Date.	Mines.	Tons.	Amount.	Purchasers.
Oct. 5	Minera	100	£3 5 0	Vivian and Sons.
	ditto	50	3 7 6	H. Southern.
	ditto	68	3 7 6	ditto
	ditto	48	3 12 0	Vivian and Sons.
	ditto	28	3 12 6	H. Southern.

BLACK TIN.				
Date.	Mines.	Ts. c. q. lbs.	Price p. ton.	Amount.
Sept. 29	Pedra-an-drea	11	2 2 0	£352 2 3—Carvedras.

COPPER ORES.					
Sampled Sept. 26, and sold at Tabb's Hotel, Redruth, Oct. 11.					
Mines.	Tons.	Price.	Mines.	Tons.	Price.
Prosper United	90	£1 5 0	Rosewarne United	68	£6 2 6
ditto	60	3 8 6	ditto	45	9 10 0
ditto	54	4 6 0	ditto	44	2 16 6
ditto	50	5 11 0	ditto	34	4 18 6
ditto	47	5 2 6	West Bassett	45	4 18 6
ditto	44	3 1 6	ditto	45	2 16 6
ditto	40	4 12 6	ditto	21	9 0 6
ditto	2	20 10 0	ditto	1	20 0 0
Carn Brea	75	2 17 6	Botallack	45	9 13 0
ditto	72	2 17 6	ditto	36	8 1 6
ditto	61	5 12 6	ditto	28	10 10 6
ditto	49	2 11 6	Trelegh Consols	53	2 11 0
ditto	33	6 11 5	ditto	25	6 15 6
ditto	14	2 8 6	Mellancarr	28	1 4 6
Par Consols	62	4 17 6	ditto	28	3 5 0
ditto	61	6 6 6	ditto	8	1 16 0
ditto	58	4 12 6	South Dolcoath	32	4 1 6
ditto	38	1 18 0	ditto	31	7 13 0
ditto	32	3 14 6	Crenver & Abraham	60	3 11 6
ditto	7	31 10 0	Rosewarne Consols	30	5 1 6
Great South Toigus	56	5 0 6	ditto	20	2 12 0
ditto	52	4 4 0	Wheal Trannack	45	2 0 6
ditto	49	4 2 6	ditto	25	2 0 6
ditto	34	3 7 0	Pendern Consols	25	5 7 6
ditto	33	4 1 0	Pedra-an-drea	20	4 0 6
East Carn Brea	50	3 7 6	Higgins's Ore	11	1 15 0
ditto	43	4 3 6	ditto	8	4 3 0
ditto	35	4 17 6	Clijah & Wentworth	10	3 16 6
ditto	33	3 11 6	ditto	2	8 3 6
ditto	25	4 1 6	Ivey's Ore	11	2 0 0
ditto	14	1 19 6			

TOTAL PRODUCE.			
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WATSON AND CUELL'S MINING CIRCULAR.

WATSON AND CUELL,
MINING AGENTS, STOCK AND SHARE DEALERS, &c.
1, ST. MICHAEL'S ALLEY, CORNHILL, LONDON.

MESSERS. WATSON AND CUELL having made arrangements for transferring their weekly Circular, which has had so large a circulation during the past ten years, to the columns of the *Mining Journal*, their special reports and remarks upon mines and mining, and the state of the share market, will in future appear in this column.

In the year 1843, when Cornish mining was almost unknown to the general public, attention was first called to its advantages, when properly conducted, in the "Compendium of British Mining," commenced in 1837, and published in 1843, by Mr. J. Y. WATSON, F.G.S., author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes" (first series, 1862), "Cornish Notes" (second series, 1863), "The Progress of Mining," with statistics of the Mining Interest, annually for 21 years, &c. &c. In the Compendium, published in 1843, Mr. WATSON was the first to recommend the system of a "division of small risks in several mines, ensuring success in the aggregate," and Messrs. WATSON and CUELL have always a selected list on hand. Perhaps at no former period in the annals of mining has there been more peculiar need of honest and experienced advice in regard to mines and share dealing than there is at present; and, from the lengthened experience of Messrs. WATSON and CUELL they are emboldened to offer, thus publicly, their best services to all connected with mines or the market, as they have for so many years done privately, through the medium of their own Circular.

Messrs. WATSON and CUELL transact business in the purchase and sale of mining shares, and other securities, payments of calls, receipt and transmission of dividends, obtaining information for clients, and affording advice, to the best of their knowledge and judgment, based on the experience of more than 30 years active connection with the Mining Market.

Messrs. WATSON and CUELL also inform their clients and the public that they transact business in the public funds, railway, docks, insurance, and every other description of shares dealt in on the Stock Exchange.

Messrs. WATSON and CUELL are also daily asked their opinion of particular mines, as well as to recommend mines to invest or speculate in, and they give their advice and recommend mines to the best of their judgment and ability, founded on the best practical advice they can obtain from the mining districts, but they will not be held responsible, nor subject to blame, if results do not always equal the expectations they may have held out in a property so fluctuating as mining.

Messrs. WATSON and CUELL having agents and correspondents in all the mining districts, and an extensive connection among the largest holders of mining property, have the more confidence in tendering their advice on all matters relating to the state and prospects of mines and mining companies, and are able to supply shares in all the best mines at close market prices, free of all charge for commission.

MINING, METALS, AND MINERALS—PATENT MATTERS.

By M. HENRY, Memb. Soc. Arts, Assoc. Soc. Eng.

There is a celebrated Latin adage, "Si vis pacem para bellum," but persons may not recollect ever having seen the sentiment enshrined in the records of the Patent Office, before the publication of a highly patriotic title for an application for patent, recently adopted by an inventor, who has (Oct. 2) sought provisional protection for what he describes as "Improvements in the construction of projectiles and ordnance and other weapons, to ensure England's fitness for war, as her best security for lasting peace." Whether the law officer, in compliance to this evidence of national feeling, will allow the title to proceed without reducing it to a more prosaic form remains to be seen. The recently-published list also contains a title including no less than seventy words, which possibly the law officer may reduce to four (viz., an improved fastening apparatus). The following applications may be noticed:—JOHNSON, No. 2559 (communication from Harrison, of Philadelphia), grate-bars.—NEWTON, No. 2561 (communication from Allen, of Agburn, United States), forming collars on metallic axes and other articles.—VALENTIN and BENSON, No. 2568, manufacture of steel.—ROBERTSON, No. 2586, furnaces and fire bars.—There is also an application the specification of which may be awaited with some interest, the subject being of especial importance to a large class of readers of the *Journal*—viz., CLARK, No. 2578 (communication from Williams, of Sterling, Poudre, the territory of Colorado, United States), for heating apparatus and for mining purposes.—An application which includes heating apparatus has been made by Mr. F. H. SCHROEDER, of the National Poultry Company (Limited), No. 2567, for incubators or apparatus for hatching eggs, and other heating apparatus, and cooking and drying apparatus. The provisional specification was drawn by M. Henry, patent agent, Fleet-street.—An application, No. 2583, has been made by GEDGE (as a communication from Tisserand, of Paris), for a tilt hammer; and provisional protection has been allowed to BONNEVILLE, No. 2584 (as a communication from Saint Roman, of Montmarie), for machinery for raising water.

Among Notices to Proceed advertised in last Tuesday's Government publication, the following may be mentioned. Any opposition intended thereto must be entered on or before the 30th inst. No. 1479, CANHAM, apparatus used when making moulds for casting.—No. 1505, BAYLISS, wrought-iron fencing, hurdles, and gates.—No. 1522, JOHNSON (communication from Farmer and Cowles), desolating crude rock or mineral oil, and preparing lubricating oil therefrom.—No. 1544, HENDERSON, girders.—No. 1570, GRIVEL, safes, strong rooms, and locks.—No. 1569, MIGNOT, adapting soluble alkaline silicates, for preserving stone, &c., and making artificial stone, &c.

Numerous Patents have been sealed during the last few days. Some of these may be mentioned:—No. 1013, SHERMAN, skirt-hoops, and covering steel springs for hoops.—No. 1023, SPARKS, for cutting heavy iron plates, and gases of blast-furnaces.—No. 1024, FROST, crushing stone, ores, &c.—No. 1029, YOUNG, grates, fire-places, and furnaces.—No. 1048, CLARK (communication from Bernard, Laurent, and Peugeot), crushing and grinding mills.—No. 1233, DENIS, purifying coal gas.—No. 1381, DE LA RITE and MULLER, treating residua of pyrites or burnt ores.—KELLY, of Cardiff, No. 453, describes improvements in the manufacture of rails, bars, and girders. According to this specification, a pile of layers is constructed in the usual way, except that it has an improved top and bottom, whereby the cost of production is reduced. He uses a single slab of steel, or No. 2 iron, or superior puddled bars, instead of the tops and bottoms with their separate shoulder-pieces.—VIEROFF and MATTHIESSEN, engineers of Paris, have just specified a most interesting invention relating to ships' telegraphs or steering indicators and tell-tales. The object of the indicator is to direct the helmsman as to the angles and positions in which he is to place the rudder, and the tell-tale is an instrument connected with the rudder-wheel shaft, or steering apparatus, to show the position adopted by the rudder, so that the commanding officer may ascertain whether his instructions have been duly attended to. The principle of construction of the instrument is as follows. Each consists of a dial, in which are three glazed openings. One is a vertical slot passing through the centre of the dial, and the two others are segmental or sector-shaped openings on the side of the vertical slot, one such opening being for starboard, the other for port indications. Behind these two openings work blades or vanes of segmental or sector-like shape; part of each vane is opaque, plain, or blank, and the other part contains glazed strips or openings, each indicating parts of an angle—that is to say, of the steering angle. Hence, according as to whether the plain or opaque part of the vane, or one or other of the glazed strips be brought to the openings, so as to be visible thereat, persons will know the position of the rudder—the invariable position of the central or vertical slot clearly indicating the position of the blades or vanes with respect to the axial line of the ship. The specification, which was drawn by Mr. Henry, patent agent, Fleet-street, explains that in order to facilitate the reading off of the signals the dial or face of the case and the plain or blank parts of the vanes are made of painted or dark metal.—HUGGOTT's specification for horse-nails, No. 426, has just been published; also, COOKE and HUNTER's, No. 433, for machinery for cutting stone. Among recent American inventions is one of ADAMS, in Allegheny, in Pennsylvania, in which, in making bolts, he proposes to enlarge or stave up into an oval or elliptic form (in cross section) the part of the rod of iron intended for the head and square of the neck of the bolt previously to forming the squaring of the neck and the heading. Among English specifications, TENBY's, No. 454, relates to a pump in which three tubes or cylinders are fixed side by side, two being pump barrels containing pistons worked simultaneously by one handle, and the third is an air vessel. In the bottom and top plates are waterways. Water is admitted into the first barrel through the bottom plate, and passes out at the top of the second barrel, and then through the bottom of the latter into the air vessel. The delivery pipe is in the axis of the air vessel, opening near the bottom and passing out at the top. A continuous equalised stream is thus delivered. For large stationary pumps the air vessel may surround the barrels.—COOKE and HUNTER's specification, No. 433, is for cutting stone, slate, and minerals, and forming tunnels, galleries, and roads. The axes of the rotating discs or wheels are supported by arms or projections in front of the carriage, so that the discs or wheels, together with the ends of the arms or projections, penetrate into the rock as the carriage is advanced; the outer ends of the arms are holed within the width of the periphery, and the discs are driven by pistons gearing into toothed rings thereon. The discs thus penetrate considerably beyond the centres of rotation. The progress of the carriage and machinery may be stopped when discs rotate endwise are used. After these have penetrated to a required extent, other teeth on the cutters then come into action and extend the incision at an angle to the main incision; the cutting ring is thus on axis or disc of comparatively large diameter, carried by an arm eccentric to the carriage.—YOUNG's patent for grates, No. 445, consists mainly in the use for fixing grates of a template or frame secured to a solid brickwork of a building, and a template or template corresponding in form with the back of the grate, to serve as a guide for forming a foundation or backing of brickwork or concrete.—WHEELDON's specification, No. 463, is for casting chilled rolls; for this purpose he uses one or more pipes for lining the "runner" or "gate." Also, he uses a head box with a stopper, for discharging the molten iron into the mould in casting chilled rolls.

KEROSENE IN NEW SOUTH WALES.—The manufacture of kerosene is now fairly established, and the local market will in future be to a small extent supplied with a local article. The existence in the colony of deposits of kerosene-bearing Cannel coal has been known for some time. Different varieties of different qualities, have been operated upon. The richest coal is that found at Hartley, and this is now being successfully worked for the manufacture of oil. The crude oil is prepared from the coal by the process of retorting. At present only nine retorts are set up; they are producing at the rate of nearly 1200 gallons per week, but they are not worked up to their full capacity. The refining power is at present equal to 10,000 gallons a week. To produce 10,000 gallons of oil it will require 100 tons of Cannel of the richest of that found at Hartley, so that at this rate of consumption the supply in store will last for a long while. The seam there is thick, and a single acre will furnish mineral enough for a year's supply at the rate of 100 tons per week.

THE BRITANNIA SILVER-LEAD MINING COMPANY (LIMITED).

4, ALLHALLOWS CHAMBERS, 49, LOMBARD STREET, LONDON, E.C.

The concession of mining rights over thirty square miles of territory has just been granted to this company by the Emperor of France; one of the mines opened upon in an advanced state, and silver-lead ore of first-class quality is being shipped to Swansea, for which prices varying from £17 10s. 6d. to £45 7s. per ton have been realised.

The directors are willing to receive applications for a limited number of the new issue of shares, which are of £1 each, payable either in full, or by instalments of 5s. each.

Further particulars relating to the concession and the mines, also specimens of the ores, may be obtained on application to Mr. N. M. MAXWELL, at the offices of the company. Reference is invited to the weekly reports from the mine, which duly appear in the *Mining Journal*.

THE GLYNRHONY SLATE COMPANY (LIMITED).

LLANBERIS, CARNARVON.

Nominal capital £50,000, in £5000 shares of £10 each, 2000 of which have been issued, and £20,000 thereon fully paid-up.

Present issue of shares 1500, being half the remaining capital.

Deposit £1 on application, and £2 on allotment.

Calls not to exceed £2 per share, at intervals of not less than three months.

The quarries held by this company are situated on the south side of the Lake of Llanberis, and have been so far developed during the last five years as to leave no doubt of the complete success of the undertaking.

The slate produced is very superior in quality, and the demand greatly exceeds the supply. The very limited capital of £20,000 only has been expended on the works, yet the profits last year were upwards of £2000.

The present yield is about 400 tons a month, of the value of £2 6s. 8d. per ton, and the sales for twelve months to March 31, 1866, amounted to £9688, as compared with £3098 in the year to March 31, 1865.

The Carnarvon and Llanberis Railway (now in the course of formation) runs through the slate-yard of the company, and will effect a great saving of expense—about £700 a year on the present make—and will otherwise add to the great advantages which these quarries possess.

Part of the quarries are free from royalty, and the remaining portions are subject to the very low royalty of 2s. a ton, equal to about 1-23d of the selling price. The time has now arrived when a judicious expenditure of £15,000, in erecting slab machinery and further extending the works, will unquestionably return very ample profits, the increased make of slates being estimated on reliable authority at from 1000 to 1200 tons a month, which, at the very moderate profit of 15s. per ton, will yield a dividend of from 25 to 30 per cent. on a capital of £35,000, with progressive further increase.

The directors have determined upon a present issue of 1500 shares only, and the allotment will take place on the 8th of November, previously to which applications for shares must be made.

Prospectuses, with full details, and forms of application for shares may be had of the acting secretary, at the office of the company, 27, Bucklersbury, London; at the quarry office of the company, Carnarvon; or from W. W. CRAGG, Esq., manager and director at the quarries, who will afford any further information that may be required.

J. BEDDOW, Acting Secretary.

THE LEVANT UNITED MINES,

ST. JUST, NEAR PENZANCE, CORNWALL.

In 6000 shares of £5 each, on which 10s. has been paid.

BANKERS.

In London—Messrs. Roberts, Lubbock, and Co.

In Penzance and St. Just—Messrs. Batten, Carne, and Carne.

OFFICES.—139, LEADENHALL STREET, CITY.

The Committee of the Levant United Mining Company having received applications for 5100 shares hereby give notice that NO APPLICATIONS FOR THE REMAINING SHARES WILL BE RECEIVED FOR THE LONDON DISTRICTS after the 23d, and for the COUNTRY after the 24th October.

Dated 27th Sept., 1866. By order, GEORGE CARNE, Manager.

GREAT WEST ST. GEORGE COPPER MINING COMPANY (LIMITED).

THE DIRECTORS beg to announce that, from the number of shares in the above company already disposed of, they have resolved to COMMENCE OPERATIONS AT ONCE.

The directors and promoters, who already hold more than one-third of the entire capital, have entrusted the management of the works to Capt. WASTLEY, a gentleman of great mining experience, in whom they have the utmost confidence. Capt. Wastley has made a most favourable report as to the prospects of the mine; he states—"As soon as the main shaft has been sunk another 10 fathoms, large quantities of ore will be sent into the market monthly, yielding a handsome return on the outlay."

The directors are of opinion that the property offers unusual inducements for investment. As a proof of the richness of the mine, tributors (when the mine was under water) returned 10 tons of ore from the adit level alone, and they are desirous of working again on the same terms, at the other workings, as soon as the water is pumped out of the mine.

The directors are determined to leave nothing undone to ensure satisfactory results, and they have decided to inform the shareholders from time to time, by circular or advertisement, as to the progress made.

Being satisfied of the *bona fide* character of the undertaking, they have much confidence in recommending it to the public as a safe investment of capital.

See extract from *Investors' Guardian*, July 28, 1866.

WEST GREAT ST. GEORGE COPPER MINING COMPANY.—There are two, if not more, circumstances connected with this undertaking which render it more than usually attractive. The first relates to the direction, the quality and influence of the persons by whom it is composed, and the large and liberal interest they have embarked in the undertaking. When persons of public repute, as well as of individual merit, embark in any transaction; when they prove their sincerity by the most effectual and tangible process open to them—viz., a large holding in the company—it is not surprising that others should be attracted to the project, and settle down as one of the really respectable adventures of its class.

The second adventitious aid of which this association is possessed relates to the character of the property itself, and the ready means of development at its command. These are, fortunately, beyond cavil, and within the reach of investigation by every one who may be disposed to take an interest in the undertaking.

The prospectus is thoroughly explicit on this subject, so that every one of its statements may easily and readily be tested, to the satisfaction of every intending subscriber. The capital is limited to £30,000, in £5 shares, and of this amount more than a moiety is already taken by the promoters, directors, and their immediate connections.

Application for the remaining shares to be made to F. W. WILLIAMS and Co., Market-street, Manchester; or BRADLEY and PERCY, Kennedy-street.

GREAT EAST CLIFFORD AMALGAMATED MINING COMPANY (LIMITED).

In 2000 shares of £10 each; £5 on application, £5 on allotment, when all liability ceases.

BANKERS.

National Provincial Bank of England, Bishopsgate-street, London.

Messrs. Williams, Williams, and Co., Truro, Cornwall.

SECRETARY—Mr. Thomas Eaves.

FINANCIAL AGENTS AND SHAREBROKERS—Messrs. R. C. Clifton and Co., Aldine Chambers, Manchester.

REGISTERED OFFICES—61, PRINCESS STREET, MANCHESTER.

ABRIDGED PROSPECTUS.

This company is formed for the purpose of working an extensive and valuable piece of rich mineral ground, situated in the parish of Gwennap, in the county of Cornwall, immediately adjoining the celebrated Clifford Amalgamated Mines, which have yielded vast quantities of copper, and have already paid upwards of £2,000,000 in dividends.

The Gwennap mining district, for its extent, is well known to be the richest mineral district in the world; it is only necessary to refer to the following—namely, the United Mines having returned £2,000,000 sterling; Wheal Jewel, £450,000; Poldice, £200,000; Wheal Clifford, celebrated for her hot lode and riches, and other productive mines. Treavevan, which returned £454,422 upon an outlay only of £50 per share, gave each shareholder a profit of £4500; and Penstruthal, £130,000 in dividends, &c.

The lodes of many of these extraordinary mines are parallel to and embedded in the same stratification as the Great East Clifford Amalgamated Mines, so that the successful development of this property is, therefore, a matter of apparent certainty, from its analogy to its rich neighbours, it being merely a matter of sinking to the depth at which the riches in the above mines have always been found to exist.

The stratum is composed of soft light blue killas, and two large elvan courses intersect all the lodes passing through the sett.

The directors refer with confidence to the reports of the mine from the most eminent mining authorities, which are well deserving of a careful perusal.

The important features in the formation of this company are, that there is no promotion money, and the liability of the shareholders does not extend beyond the payment on the allotment of shares, which relieves the shareholders from the annoyance of having repeated calls made upon them.

It is estimated that a dividend of at least 20 per cent. will be declared within twelve months; and in order to testify the vendor's confidence, he has agreed to guarantee a minimum dividend of 10 per cent. for two years.

At the first general meeting of the company it is proposed to give the shareholders the option of electing one or more of their number to represent them on the board of directors.

Applications for shares to be addressed to the Secretary, or to Messrs. R. C. Clifton and Co., from whom prospectuses, reports, and all particulars can be obtained.

R. C. CLIFTON and Co. invite subscriptions to this undertaking, believing that it will become the greatest mining enterprise in the Kingdom, the adjacent mines having returned upwards of £10,000,000 sterling in dividends.

Early application for shares is necessary, as the directors reserve to themselves the power of closing the list without giving any notice.

MR. D. STICKLAND, M.E., has had upwards of 40 years'

mining experience in Cornwall, during several years of which he has had the entire management of mines. Advice given gratis. DEALER IN MINING, RAILWAY, AND OTHER SHARES.

RARE OPPORTUNITY.—FOR SALE, TEN SHARES IN A SILVER-LEAD DIVIDEND MINE, at £8 each, not in the market, company first-rate.

ONE HUNDRED SHARES IN A GRANITE QUARRY, at 20s. each, likely to pay 30 per cent. in twelve months.

EIGHTY SHARES, or any less number, in a PATENT STARCH WORKS on which £5 has been paid, and in full course of operation, paying 10 per cent., with every probability of increasing more than double in a very short period.

20 shares in Chentals, 20 shares in Calbreck Fells, 100 shares in Frontino, and 60 shares in Great South Chiverton; for the latter no reasonable offer refused.—Temporary Offices, 5, Finsbury-street, London.

Notices to Correspondents.

* Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the *Journal* should be filed on receipt: it then forms an accumulating useful work of reference.

"THE GEOLOGY OF NORTH WALES," BY PROFESSOR RAMSAY.—The publication of this important work has been anxiously desired by those who take an interest in the mineral development of the Lower Paleozoic Rocks in North Wales. Sir Roderick Murchison, Director-General of the Geological Survey, writes:—"It is the most important work which has been issued by the Geological Survey during the ten years that have elapsed since I became director." The appearance of such a book will, no doubt, cause much scientific discussion; it is Wales. Writing about the Cambrian series, in which lie the great slate quarries of Llanberis and Penryn, the Professor states these are the equivalents of the rocks between Harlech, Trarwafynydd, and Barmouth. If such be the case, slate speculators will be well in turning their attention to this promising but hitherto neglected district.—METAMORPHIC CAMBRIAN.

NEW TREBUCKET.—On April last I was induced to take shares in New Trebuket Mine, St. Austell. Can any of your readers inform me—1. The value of the shares at that time, and the then prospects of the mine?—2. The name of the bankers of the company, and on what date the bank stopped payment?

—3. Why has the mine stopped, and to what "London party" was the mine disposed of for 1000l. at the meeting of Sept. 13?—4. Is the mine to be worked, under what name, and on what terms to shareholders?—A DISAPPOINTED DISTANT SHAREHOLDER.

CONSOLIDATED COPPER MINES OF COBRE.—"J. N."—In the *Journal* of Feb. 3 and Aug. 4 will be found reports of the two last meetings of this company. The depression in the price of shares is considered to be caused by forced sales—shareholders, in many instances, being afraid of the call.

WHEAL GRENVILLE.—"A Shareholder" suggests that the next meeting, which will be in a few weeks, should be adjourned to be held at the mine. As a large number of the shareholders reside in Cornwall and the Western Counties, this would enable them to attend, and the agents could be present to answer any necessary questions.

CALBRECK FELS SILVER-LEAD AND COPPER MINING COMPANY.—I was somewhat surprised to find that, in last week's *Journal*, no notice, official or otherwise, was taken of "Tyro's" well-timed and judiciously written letter which appeared the week ending Sept. 29. "Tyro" spoke the opinions of a large portion of the shareholders when he said he did not clearly understand the precise value of this mine, and, therefore, urged upon the manager to give a clear statement of the discoveries made since Jan. 1. Shareholders are given a fairly satisfied that they possess a property of great mineral wealth, requiring development only to make it permanently productive; but, as they have been from time to time informed of "important discoveries" having been made, it cannot be wondered at that they look for some definite statement from the manager as to the extent and value of those discoveries. "Tyro," it seems, has understood that their gross worth is something like 100,000l. If it be so, shareholders should certainly be informed of it, otherwise they may be induced to dispose of their interest at the current nominal quotations. It appears, too, that the whole of these discoveries have been made during the present year, and that they are altogether distinct from the objects for the attainment of which the present company was formed.—J. B. City.

DYFNGWY MINES.—The letter from Mr. E. Davies shall appear next week.

CHONTALES GOLD AND SILVER MINING COMPANY.—The letter which appeared in the *Mining Journal* of Sept. 29 from Earl Nelson, the Chairman of the company, to the effect that he is "anxious to warn the shareholders against any statements that may be put forth for or against the company without the authority of the board," is just sufficiently curt to raise the suspicion that there has been "put forth statements for or against the company," but at the same time not sufficiently explicit to enable the shareholders to form any satisfactory data. Probably, however, the Chairman is not cognisant of the circumstance that the statements that are going to be put forth, "with the authority of the board," are perfectly well known to a privileged moiety of the shareholders at least one month prior to their publication by the board. Indeed, taking into consideration all that has appeared without "the authority of the board," and therefore, unofficially, it becomes very questionable whether the shareholders have not gained more information as to the merits and prospects of the undertaking than they could possibly obtain from the mere dry and always sparse official information. It is well enough for our respected Chairman to say that "the board have endeavoured to avoid all one-sided or exaggerated statements, and in their report which will be circulated before the annual meeting, to be shortly held, they will endeavour to place before the shareholders the exact position of the company;" but surely our Chairman cannot be oblivious of the fact that all who are interested in the development of these mines, being situated in a district hitherto unknown to the British capitalist, are naturally anxious to be made acquainted with every "minute detail"—as the managing director at the last meeting not inaptly termed it—from which a discerning mind can form its own opinion without "the authority of the board." Our Chairman should further remember that 12 months is a very long period to elapse without the shareholders having the advantage of conferring with their executive, and that if the board are really anxious that shareholders should be kept fully acquainted "with the exact position of the company"—and there can be no doubt that such is their desire—then certainly no more successful course can be adopted than to hold the general meetings at least half-yearly.—A SHAREHOLDER.

THE MINING JOURNAL, Railway and Commercial Gazette.

LONDON, OCTOBER 13, 1866.

The opening up of the northern provinces of Portugal, by means of railway communication, is a matter of much importance to the commercial interests of this country, and, with the exception of the wine trade, to none more so than the class interests which the *MINING JOURNAL* specially represents. When the Portuguese Government last year introduced to the Chamber a Bill for facilitating the export of the cheaper kinds of port wine, which the duties until then almost prohibited, the Ministers pledged themselves that no new railway project would be sanctioned by the Executive which had not for its object the development of the resources of Northern Portugal; and Count de CASTRO, the Minister of Public Works, stated in his place in Parliament that surveys had already been made, on account of the Government, for the construction of a line of railway from Oporto to Regua, along the banks of the Douro, and thence, following the same course, to Barca d'Alva, on the frontier of Spain, with branches in the respective valleys running northward. The main object in view, no doubt, was to ingratiate the wine-producing population, but in serving one class they necessarily benefit another, and much increased wealth, now lying dormant for want of easy and economical means of transit, would be brought quickly into vitality. The provinces of the Minho and Beira abound in slate, iron ore, argentiferous copper, and minerals generally, from which there can be no doubt—indeed, every reason to believe—a large trade will spring up. The slates from Vallonga already furnish an article of commerce, notwithstanding all existing drawbacks, and, locally, it is calculated there will be much interchange of business with Canada, the United States, South America, &c., through such commercial products. In addition, there already exists several mining associations, and an English and Portuguese joint-stock company has lately been established, under limited liability, for working the Pinter and Pindella range of mines for silver and copper; while some gentlemen of experience in such matters, and who reside in the neighbourhood of Oporto, believe that they will be able to produce bismuth in commercial quantities. In fact, there is a grand field for mining enterprise in the North of Portugal, and if the result at all approximates what has already been done in the South, through the energy and perseverance of Mr. MASON and others, the benefit to all interested will be most remunerative.

All these things, however, depend, more or less, on the convenience of, and economical shipment, and whether it be the wines, the olives, the ores, the wool, the bark, or any other article of export from the North of Portugal, they must have ready and constant means of shipment and transmission to other countries; such, however, is not now practicable. The entrance of the Douro is at times a perfect barrier and drawback to enterprise, and although when once in the river all is comparatively serene for commercial purposes, it often occurs that a little fleet of steamers even may be seen outside which dare not venture over the bar, and the consequence is that only such vessels as are obliged go into the Douro. The Government is sensible of this, and have desired to remove the danger and inconvenience, but financial difficulties of State have, invariably, stood in the way, and the question, though often mooted, has been put aside for other pressing demands on the Exchequer. The pledge under which the Portuguese Government and Legislature now stand to the North of the country gives, however, a different aspect to things, and the Board of Public Works have taken steps to bring into operation a scheme for a breakwater and harbour of refuge at Matanzinhos, about four miles from Oporto, outside the bar, and giving communication by railway to the Custom House of Oporto, along the banks of the Douro, from the mouth of that river. It is represented

as a grand national object, of easy construction, and one which will tend materially to give vitality to the varied and valuable undeveloped resources of Northern Portugal, and so open up work for the people, and keep at home the hardy peasantry of the northern provinces, who, for want of a remunerative return for labour in their native land, go for an uncertain living in distant and, more or less, unhealthy climates, whereas the developed mineral and other wealth of the country, with railway facilities, and with a harbour where vessels could enter and moor in safety at all seasons, would in due time cause an increase in the census, by thus stopping the continued drain of the male population which now goes on, for the Brazils especially. There is every natural advantage in selecting this spot for the purpose mentioned. The rocks of Leixois stand out in front of the main land, and are never submerged by the highest tides, so that if they were connected by the usual means of constructing such works as a most powerful breakwater would be established, and all the interior arrangements would then be with facility carried out. Oporto would thus become a grand port indeed: it is only marvellous that so much trade should be carried on in wine and other things, as it now stands in respect of shipping; but, of course, these delays and difficulties increase the freight, and the consumer has to pay the cost. The outlay for such a project ought not to be regarded. The buoyancy which would be thereby given to trade and commerce, and the advantages which would accrue to the country generally, more especially to the city of Oporto, from the realisation of the scheme, would be such, that the dues and charges, at most moderate rates, would speedily yield such a revenue that the Government would not be called on to provide extraordinary means to pay the interest on the money put down to capital.

Amongst the very many results which this harbour would produce would be an immense increase in the fisheries of the North, which are now carried on in open boats, and, for want of a place of refuge, cannot be continued during bad weather, when most fish are on the coast, without being exposed to the greatest possible risk and danger to life and property; unhappily, too often proved. It may, therefore, fairly be presumed that, with so fine a coast as exists in the North of Portugal, the fisheries there would become as important as those of the South: and, as a natural consequence, an important increased receipt in the dues would follow, while the expansion of railway communication would augment demand, and keep up prices to compensate all parties, by facilitating supplies to the provincial markets.

Moreover, all vessels that now make for Vigo in bad weather would frequent the new port, and it is needless to enumerate the number of vessels bound annually to the different ports of Portugal, besides others which put in for the purpose of coaling or repairs; while the certainty which would be consequently given of getting into a harbour of refuge would materially reduce freights, which are now so high during the winter months, and so, again, facilitate trade and commerce generally.

As a place of deposit for coals for steamers, &c., this harbour would be most important, not only as far as regards the increase of revenue, but also by benefiting the native manufactures and foundries in and near the industrious and enterprising city of Oporto, which fact of itself is worthy the attention of the Government in considering the general subject. Again, vessels from the Brazils, Newfoundland, &c., would, most probably, go into this harbour for orders; and when railways to the most important towns and to the frontier of Spain are finished, it is more than probable that a regular line of steamers will be established between Portugal and the United States, and so produce a large passenger as well as goods traffic for Europe generally. The total absence, moreover, of trade between Oporto and the Portuguese African colonies arises, no doubt, from the want of a harbour accessible at all times; and when this drawback is removed it is reasonable to believe, from the enterprising spirit in the North, that a good business will spring up, and new enterprises follow, directly or indirectly adding to the wealth of the country.

In every sense and under every phase of Portugal's requirements, this harbour ought to be established with the least possible delay; while, finally, in the spirit of humanity and philanthropy towards the world's navigation, such a refuge as that proposed is essentially wanted; the loss of lives and property which crossing the bar of the Oporto river so constantly entails is proverbial, and this fact alone ought, and undoubtedly will, have great weight in the councils of the Portuguese Government, and in facilitating the completion of this great work; which, as we have already said, is of so much importance to almost every branch of the industry of our own country.

GUN-COTTON EXPLOSION AT WOOLWICH.—Not long since it was threatened suddenly to abandon the projected use of Nitrocellulose, notwithstanding its extraordinary explosive properties, in consequence of an accidental explosion, and an equal amount of annoyance has now accrued to the manufacturers of Gun-Cotton, from the explosion of that material at Woolwich. In each case the misapprehension has been removed as soon as it has been made known that all that is necessary to secure immunity from accident is attention to a few simple precautions, customary amongst chemists, and readily learned by the general consumer. The explosion of gun-cotton at Woolwich can scarcely be classed amongst accidents, since it took place in a brick chamber specially constructed for ascertaining by the most severe tests, short of actual ignition, that could be applied by artificial means, to what extent the material could be heated without danger. The experiment, like many others, was carried a little too far, and hence the explosion; but the knowledge acquired has furnished an ample amount of compensation. The chamber in question was for three months heated daily for twelve hours to 120° Fahr., and for seven months the temperature had been similarly raised to 130°. The gun-cotton was packed in large cases, to which registering thermometers were attached, with a view to noting any rise in the temperature of the cotton, such as previous laboratory experiments had shown invariably precedes the decomposition of the cotton. A man was employed to register the periodical readings of the thermometer. Without going into the minute details of the experiment, it may be stated that none of the cotton, although in each case was purposely deposited a less perfectly-prepared sample, showed any signs of yielding to this artificial temperature for the first six months, when indications of incipient decomposition appeared in one case, which was promptly removed. Subsequently, from time to time, the thermometers of other cases rose, pointing to the commencement of chemical change in their contents, and necessitating, of course, the removal of the cases. If decomposition was thus invariably preceded by a rise in the temperature of the cotton, and if this rise were carefully noted, thus rendering it practicable to arrest any chemical disturbance by the immediate removal of the cotton, the experiment, it was argued, might safely be continued until the maximum period for which good gun-cotton would endure great heat had been satisfactorily established. The experiment was accordingly pursued until abruptly brought to a close by the explosion of the remaining gun-cotton after ten months' exposure in the hot chamber. Four possible explanations of the explosion suggest themselves:—That the man whose duty it was to examine the thermometers, and who performed that duty only 15 minutes before the explosion, failed to note the readings of all the thermometers; that he noted one of the readings incorrectly; that heat had been locally developed in the interior of a mass of cotton at such a distance from the thermometer as not to be sensible in a general rise of temperature; that, contrary to all precedent, a violent action suddenly occurred, without any previous rise of temperature. Whichever of these explanations be adopted, it is evident that no discredit is thrown upon the cotton itself, which has been placed under conditions specially contrived with a view to its destruction, though feared about with such precautions as there were good grounds for supposing might be depended upon to ensure the destructive action being noticed at the outset, and stopped short of an explosion. On the other hand, the experiment had proceeded long enough to demonstrate that gun-cotton will sustain a more tropical temperature for a much greater length of time than would occur in actual practice.

CENTRIFUGAL PULVERISER.—Amongst the earliest inventions patented in this country is that for the pulverisation of quartz by firing it from a cannon against thick iron plates, but the admirable principle involved was not considered capable of practical application, until Mr. Joseph Mosheim brought forward his centrifugal quartz-crusher, in connection with the treatment of the gold ores of Wales. A modification of the latter invention has now been patented by Mr. THOMAS CARR, of Bristol, who very truly states that the cannon was soon torn to pieces, and that the operation was exceedingly dangerous, expensive, tedious, and quite inapplicable to any but the brittle substances—the continuous action of a machine being wholly wanting in it. Mr. Carr's machine may be described, in popular language, as a series of squirrel cages, placed concentrically one within the other, each cage rotating in a direction differing from that next to it. The bars of the cages form the beaters against which the crushing is effected, and the several cages are so isolated as to give them the requisite clearance, and prevent any scrubbing or grinding action on the material which might ensue between them if they were rotating in too close proximity. In employing the machine, the material is thrown in at the centre, and after the lumps, if very large, are broken by a stationary knife, fixed so that its blade may extend into the interior of the innermost cage, they are thrown out by centrifugal force from the first cage at a tangent to its circle, and at a speed equivalent to that at which the bars of such cage are rotating when meeting the bars, or as Mr. Carr designates them, beaters of the next cage, moving in an opposite direction, their direction is reversed, and they are again thrown outwards to meet the beaters

of the third cage, also moving in a contrary direction, and so on with the fourth, when (and that in less than a second from their first introduction) the fragments, reduced to a finely granulated state, are delivered in a radiating shower alike from every part of the periphery into a surrounding casing, all the beaters (of which there are about 170) being thus simultaneously effective, and the balance of the machine maintained. Such is the inventor's description of the machine, and Mr. Carr claims that so great is the momentum thus given to the material by the centrifugal force of each set of beaters, at the usual speed at which these machines are driven, that to obtain the same amount from gravitation (allowing for atmospheric resistance) it would be necessary that the material should have a fall through the air of not less than 5000 to 6000 feet perpendicular on each successive set of beaters, through a series of vertical casings, to prevent the dispersion of it, and the result would then be only equivalent to what is effected in the disintegrator, which occupies in all but a few cubic feet. The machine has been extensively employed for disintegrating artificial manures, guano, sugar-scum, bone-ash, &c., and in mixing clay, broken glass, brown sugar, and chemical products, for which purposes it has proved quite applicable.

THE DURATION OF THE SOUTH WALES COAL FIELD.

BY MR. R. BEDLINGTON.

[We have been favoured with a copy of the following paper, which was read at the recent meeting of the South Wales Institute of Engineers, and referred to in our report of the Proceedings in the Supplement to the Mining Journal of September 29.]

The duration of the coal contained in the South Wales coal field must be a subject of great interest to the members of this Institute, and it is certainly of great importance. The writer has endeavoured to arrive at an approximation to the quantities contained in the area of this coal field, and hopes that the errors, or omissions, of the paper will be rectified by the members, who are well acquainted with the various localities of the district. The enormous extraction of coal yearly has raised an uneasy feeling in many that our mineral treasure will be exhausted in a comparatively short period. This being the case, the writer believes it to be the duty of such an Institute as ours to endeavour to get at data by which we may settle with some degree of exactness the probable duration of our coal field. When we consider that our iron trade, all our manufactures, our railways, our steam navigation, &c., are dependent on our coal, and that our emine in trade, displayed in our exports, depends on the cost of our fuel, I need hardly ask for the subject of this paper your attention, and that you bring forward in the discussion that follows the information that the members can give with fullness and exactness, as they are the managers of the majority of the collieries in South Wales.

I have taken the Ordnance Map of one mile to an inch as the authority for the areas of the veins, and I think the map will be found to be sufficiently correct. To get the average thickness of the veins I have consulted the sections of the strata in various parts of the basin, and taken an average thickness of the aggregate of veins of 2 ft. thickness and upwards. In the upper series we find the Mynyddylwyn and the Brithdir veins, and the area of these I find to be 44 miles \times 5 miles = 242 square miles. Now, the lower series of veins can be taken together, and the area, with lines drawn at a mean of the "crops" of the various veins, will give 48 miles \times 13 miles = 624 square miles. From a variety of sections, I find the average thickness of the upper series to be 8 ft., and the average thickness of the lower series 41 ft. 6 in. Taking the specific gravity of the coal at 1.25, the weight of a cubic foot will be 78 lbs. An acre of coal 1 ft. thick will, therefore, give 1516 tons, but out of this quantity we must make the following deductions—loss of pillars, gobbled small coal, rotten coal, faults, and rolls—(say) 20 per cent., or (say) 303 tons; there remain 1213 tons, or (say) 1200 tons per acre of 1 ft. in thickness. A square mile of coal 1 ft. thick will give 768,000 tons. (I may as well say that the ton is 20 cwt., of 112 lbs. = 2240 lbs.) The upper lines of veins, taken at 8 ft. in thickness, and an area of 242 square miles, will yield 1,486,848,000 tons. The lower series of veins, taken at 41 ft. 6 in. in thickness, and an area of 624 square miles, will yield 19,888,128,000 tons.

This gives us a total of.....Tons 21,374,976,000
From this deduct for past working..... 21,976,000

Leaving..... 21,100,000,000

We have thus shown that there is a probable quantity of coal, in veins of 2 ft. and upwards, of 21,100,000,000 tons.

In 1864, Monmouthshire got.....Tons 4,028,500
" South Wales got..... 6,948,000

Total..... 10,976,500

In 1865 about 11,000,000 tons would be the produce. The present get of coal could, therefore, be continued for 1918 years; or the South Wales coal field alone could supply all England, at her present yield of 92,000,000 tons, for 229 years. In addition to the above quantity there is the outlying Pembrokeshire basin, which I have thought not necessary to take into the estimate.

We have now to consider the practicability of getting at these large supplies. Depth is one of the most important questions connected with the subject, for you have increased expenditure to win the coal, and increased cost of getting it, from the greater amount of repairs, arising from the greater pressure at increased depths. It will be necessary in the deep pits to tub back the water, so that pumps need not be taken far down. This has been admirably done in some pits in the North of England, so that they have but very little water at the bottom of the pits. Then, again, the ropes can be balanced in the deep pits. There has been a good deal of controversy about the increase of heat in depth, but from many experiments made we may assume that there will be, probably, an increase in the temperature of 1° for every 55 ft. in depth. Whatever the average of increase in temperature may be, it is very certain that we shall have increased temperature at increased depths. Now, accepting that to be the case, there will be only one probable mode of lowering the temperature, that is by greatly increasing the ventilation, so as to have a great current of air, divided into several strong splits, carried through the ramifications of the workings. It is probable, also, that the steam-coal veins will evolve greater quantities of inflammable gas at increased depths, which will render it necessary to have very strong currents of air, irrespective of the temperature, to dilute the gases. But this points to increased cost. In view of this, manufacturers have economised their coal considerably already, and there are methods now being carried out by which greater saving will be made in future, to balance the increased cost.

It may be said that although we have an immense quantity of coal, we are increasing the get so enormously that matters will assume quite a different appearance in another generation. Well, the experience of colliery managers, I believe, is that if we are to depend upon manual labour we shall not be able to increase our get largely henceforth, even if there was the demand, as the number of colliers available is limited. Then arises the question of cutting coal by machinery. All the experiments now making are useful, as the machines are getting more and more perfected; but hitherto they only do part of the colliers' work—i.e., holing, but still it is so much of the colliers' work done. No doubt, in the future, the power of steam will be brought to bear on the cutting of coal. The writer calculates that the depth from the surface (at the centre of the South Wales basin) to the lowest workable vein will be about 1000 yards. As there is a pit in Lancashire nearly 700 yards deep now working, it will be seen that the remaining 300 yards of depth will not present an insuperable difficulty. During the period that will elapse before these great depths will require to be reached, improvements in engineering will give great facilities for winning these deep coals.

In these calculations we have supposed the veins to continue of the ordinary thickness (proved in the present workings) throughout the unexplored portion of the coal field. Large sums are laid out on the faith of such continuance of the veins, and up to the present time without disappointment; except in some cases, where veins have proved thinner, or have been rolled out, it is to be hoped, only temporarily. In other parts of the coal field the winnings have proved the veins to be of good average thickness in the deep workings. Veins of 2 ft. in thickness have been calculated in the total thickness of coal, and there is no doubt that, although they may be neglected at present, as the deep workings are found to become more and more expensive the thinner veins will be brought into work, more especially when the small coal can be advantageously used, as the thinner veins produce a larger percentage of small proportionally. As for the consumption of small coal, that is being extended more and more in the supply of forges, mills, and engines, and the production of coke; large quantities are being utilised in the manufacture of patent fuel. In the South Wales coal field we have a great variety of coals, from

anthracite to the most bituminous coals; but the most highly esteemed is the steam coal, and we shall probably have a continued and increased demand for this variety. But it is not likely that the iron manufacture will continue to increase in the same ratio as in the past, as we have pretty well furnished our own country with railways, and America and Europe are getting into a position to become independent of us, as their mines and ironworks are getting more developed, and they have the freight always in their favour.

Even to keep up our export trade of coal it will be necessary to try and keep down our cost of coal, and to counterbalance the increased cost of working by using steam-power wherever available—in hauling underground by tail ropes, endless ropes, or endless chains, and eventually in using coal-cutting machines. As large sums will be laid out in mining, it is highly important that as much coal as possible should be extracted from the area won. Where it is necessary to work stall and pillar let the pillars be fairly worked away; and wherever it can be economically carried out long-work should be adopted, which clears away all the coal. Whatever may be the extent of our coal field, and although centuries may be required to exhaust it, it is the duty of colliery managers to lose as little as possible of this valuable mineral.

THE DIELETTE MAGNETIC IRON ORE.

This immense deposit of iron ore is situated about 15 miles south-west of Cherbourg. Its superior quality, the great existing facilities there are for its export, and the comparative low cost at which it may be produced render it well worth the attention of the ironmasters and capitalists of Great Britain. It has been tried in some of the French blast-furnaces, and the following is the report given of one of these trials:—

The Diélette ore is a compound of magnetic oxydised iron and a portion of glance iron. It produces from 50 to 60 per cent. of pure metal. It can be worked directly in the blast-furnace, no previous roasting being necessary, and it is very easy of reduction at a very small expenditure of fuel. In the furnaces at Maubeuge (Nord), where this ore has been used, the quantity of iron obtained has immediately been nearly doubled, and the consumption of fuel has been at the rate of 100 kilogrammes of coke per 100 kilogrammes of forged pig, and the pig-iron thus obtained has been first-class in quality. In the puddling-furnace this pig-iron has been worked with the greatest ease; the waste varies from 6 to 7 per cent., and the puddled iron thus obtained has shown the greatest resisting power. In re-heating the puddled iron a very good quality of latten (plate) iron has directly been obtained. The same heated *ad hoc* has given granulated iron and puddled steel of an excellent quality.

From enquiries that have been instituted into the cost of mining this ore, it appears it may be produced at the mine at about one-half the cost price of the argillaceous ores of the coal measures in this country, and that it may be exported as a return freight at from 2s. to 4s. per ton. Taking, therefore, into consideration the cheapness of its production, the low freight, and the unusually large yield of metallic iron, as well as its good quality, there can scarcely be a reasonable doubt but that this ore will yield highly remunerative profit were extensive mining works established on the property. In addition to the sale of the ore, the erection of furnaces and rolling-mills at Cherbourg, to convert the ore into malleable iron, would also be a source of profit, the more especially as a considerable portion of the iron consumed in France is imported from other countries.

We understand a concession of upwards of a thousand acres of this extensive iron ore field has been obtained from the French Government, on merely nominal terms, and that it is in contemplation to form a company to develop these vast resources. The great and rapid extension of the iron trade in this country and in France presents strong guarantees for the success of such a scheme. With sufficient capital, and efficient management in every department, such an enterprise can scarcely fail to be remunerative to the shareholders, and highly beneficial to one of the greatest manufacturing interests in the country.

THE IRON AND COPPER MINES OF MOUZAIA (ALGERIA).

In September, 1844, a concession for these mines, signed by Marshal Soult, then Minister of War, and confirmed by Royal Ordinance, dated Sept. 3, 1846, was granted for 99 years, and in January, 1855, the grant was by Royal Decree rendered perpetual. The conditions imposed were a payment to the State of 5 per cent. on the value of the ores exported to France, and 5 per cent. upon the ores treated in Algeria; exports to all other destinations being entirely free. The concession consists—1, of the grant in perpetuity of the mines discovered, or which may hereafter be discovered in the Mouzaia territory; 2, of the enjoyment for 99 years of all rights in the several lime and stone quarries, and of 216 hectares of arable land on the said territory; 3, in the possession of the village of Mouzaia, built by the company (about 500 dwellings), manager's offices, magazines, usine, tool-shop, &c., depending upon them; and 4, in the possession of all the property in a very large works situated in France, and used for the copper foundry, called the Caronte Works, on the pool of the same name, in the commune of Martignes (Bouches du Rhone). These works have always possessed the privilege of manufacturing sulphuric acid and salts of soda. The buildings cover about 8000 metres by 6 hectares, the whole being thoroughly enclosed by walls. The works are approached by a quay connected with the Caronte Dock, and has a bridge which permits the shipment and unshipment of goods. In 1856, a report upon the mines was made by Mr. Archelaus Tregoning, and by Mr. Clung, a French engineer, in which they say—“Your mines have been scarcely touched, and they have always kept to the same spot; there is no doubt that in other parts of the concession, which remain virgin until this day, there will be discovered copper deposits as rich as were originally those which for the last ten years have been at work. An opportunity (says one of them) rarely occurs to make a report on the prosperity of a mine which, in my opinion, promises more than the copper mines of Mouzaia. In conclusion, I confirm the opinion that I have already expressed to you, that the mines promise much, and that they will be of great value if the works are well carried out.”

Since this report the works have been conducted most disreputably—prosecutions have been directed against several, some have absconded, and some have been condemned; 6,000,000 frs. have been expended in mine works, materials, utensils, &c.; in the construction of the village of Mouzaia; further, there has been expended upwards of 1,000,000 frs. in constructions, &c., at the metallurgic establishment at Caronte, a seaport of France, so that the total expense has been raised to more than 7,000,000 frs., yet the proprietors offer to cede the whole for 3,000,000 frs., and to give every facility for payment. Last year there was a little work done, and they raised 50 tons of ore per fortnight, the sales realising 10,000 frs., and gave 5000 frs. nett profit. The ore never remains on the floors, being no sooner raised than sold, whatever may be the quantity. The mines of Mouzaia are known to be rich, and capable of yielding large quantities, and the concession is nearly 4 leagues long by 3 leagues wide. All the land is cultivated, and a single farm returns an annual rental of 2000 frs. The social capital of the society for working the Mouzaia Mines is 6,000,000 frs., divided into 60,000 shares, to bearer of 100 frs. each, and has been expended almost entirely in constructions connected with the enterprise.

SHALE OIL IN BRAZIL.—A light-grey shale, yielding on the average 80 gallons of oil to the ton, has recently been obtained in large quantities in Brazil, about 80 miles from Bahia. The seams are several feet in thickness. Samples have been submitted to Sir R. Murchison and the Coal Supply Commission, and a company is projected for rendering the oil available.

FACTORY SMOKE, AND HOUSE SMOKE.—From the researches of Dr. Crace-Calvert, F.R.S., it is ascertained that whilst dwelling-house smoke is comparatively harmless, factory smoke is highly deleterious. He explains that the smoke from private dwellings carries with it (and that solely at the time and shortly after fresh coals are added) only carbonic acid, carbonic oxide, and sulphuric acid gases, and a small quantity of the most volatile hydrocarbons, the less volatile products forming “soot,” which remains in the flue. The gases, the escape of which continues but a few minutes after firing, have but little or no action on vegetation or man. In burning coal under steam-boilers the results are very different. The fuel is not, as in private dwellings, perfectly consumed, but there is a

The Argoed Colliery Company (Limited) case was heard the day. Messrs. Blakeley and Bewick applied, and the application was stated to, that the provisional Liquidator might be authorised to employ a solicitor, and advertise his appointment in the *Gazette* and other newspapers.

In the Nant Colliery Company (Limited), which is in course of liquidation, the property of the company was stated to be worth about £100,000. The amount likely at any one time to come to the hands of the Liquidator was stated to be £2000.; and he was ordered to give security for that amount.

The Clydach Iron Company (Limited) creditors have been invited by circular to a meeting at Hereford on Monday next. The principal shareholders are men of high position; and, although shares are paid-up, it is believed that all the creditors will ultimately be paid in full.

In consequence of a dispute a short time since, the puddlers, ballers, &c., employed at the Pontymolle Ironworks struck work. The cause of dispute was stated to be the refusal of the men to work an inferior quality of iron at the current prices for superior descriptions of iron. It is satisfactory to state that an amicable arrangement has been effected, and the whole of the iron on strike have resumed work.

In the *Mining Journal* of Sept. 15 appeared the gratifying intelligence that the Upper Forest Iron and Tin Works, which has been lying idle for the last eight years, had been leased for a term of 60 years to Messrs. Morgan, Lewis, Evans, and Jones. These gentlemen, it is confidently stated, intend to commence operations at the tin works in the course of next week, upon which occasion a demonstration on a large scale will take place in honour of the event. It is not unlikely but that the blast-furnaces, which are three of the finest in South Wales, will shortly be blown-in.

Messrs. Griffiths and Thomas, of Newport, the new contractors for the Merthyr sewerage, commenced operations last week. According to the terms of the contract, the whole of the works will have to be completed within 18 months from the time the contract was entered into.

The branch railway connecting the Merthyr, Tredegar, and Aber-gavenny section of the London and North-Western system with Beaufort and Ebbw Vale is again being proceeded with, and it is intended to carry the works of the Brynmawr and Blaenavon Railway, the Bill for which was passed at the last session. This line will be also connected with the London and North-Western system, so that by means of it and the Beaufort and Ebbw Vale Railway the whole of the iron and coal works lying to the west and east of Monmouth will be at the advantage of direct narrow-gauge communication with the North of England.

TRADE OF THE SOUTH WALES PORTS.—The following are the returns of the exports and shipments at the South Wales ports during the month of September, and for the corresponding month of 1865:—

EXPORTS OF COAL.			
	Sept., 1866.	Sept., 1865.	
Cardiff	Tons 157,720	Tons 142,564	
Newport	29,487	36,048	
Swansea	44,004	42,060	
Llanelli	5,754	8,772	
SHIPMENTS COASTWISE.			
	Sept., 1866.	Sept., 1865.	
Cardiff	Tons 53,592	Tons 73,670	
Newport	49,218	62,282	
Swansea	18,986	21,013	
Llanelli	11,176	27,391	

Cardiff also exported during the month of September 9077 tons of iron and 3633 tons of patent fuel; Newport, 6186 tons of iron; and Swansea, 1886 tons of iron and 7764 tons of patent fuel. Of the iron exported from Cardiff 1675 tons were sent to New York, 1463 tons to Kurrachee, 1436 tons to Gottenburg, 1360 tons to Cronstadt, and 1249 tons to Baltimore. Of the iron cleared out from Newport 2099 tons went to New York, 1899 tons to Halifax, U.S., 1316 tons to Cronstadt, and 700 tons to Havannah.

Mr. John L. Pott, of Pottsville, Pennsylvania, who was recently in South Wales, has written the following letter to an American friend, Mr. Burd Patterson: we have been requested to publish this communication, and, as containing the views of a practical man, it will be perused with interest by the readers of the *Mining Journal*:—

REPORT FROM DERBYSHIRE AND YORKSHIRE.

Nant-y-Glo, South Wales, Aug. 26.—I have all this week been engaged in visiting the principal ironworks in this part of the country. There is a chain of large works running from this point east, in the following order:—Nant-y-Glo, Elywale, Treorchy, Rhymney, Dowlais, and Cyfarthfa. From Nant-y-Glo to Cyfarthfa is about 12 miles. There are other larger ironworks included in the above range, which we have not visited—Pen-y-darlan, Plymouth, Victoria, &c., all of which are quite extensive, and would well repay us if we could spare time to go there. There are 14 blast furnaces belonging to the Nant-y-Glo works, and rolling mills to make all the produce of these furnaces into rails and bars. Everything here looks dilapidated and run down, and 50 years behind the times. It takes hard scratching to get the coal and ore; and as to iron ore, judging from specimens I have seen here, and information I have received from the local mining men, it is not much better than the Cyfarthfa, and as good a quality. The celebrated "spotted vein," as it is called here, is only about 1 in. thick, and in the slate above it are a few scattered balls of ore, which, including the thin, will give only 10 in. of solid ore in 5 ft. of mining. Of this vein of ore, and others, no more favourable, most of the Iron in South Wales has been, and William Kendrick has a better seam of iron ore at St. Clair shaft than any I have seen in South Wales. I tried to persuade him to work it before Telford goes; I wish you would urge him to do so. He has a 10-in. vein, which would yield 100 tons of a first-class ore in about half of it. I think that the time has now come for this. You start a small mill, and in 12 months you will have 23 blast furnaces, 100 puddling furnaces, and about 70 heating furnaces; you manufacture 2300 tons of rails and bars per week. It was here that Parry's experiments were made, and we saw his cupolas and converters. Mr. Abraham Darby, the principal owner and active manager of the works, went with us, and gave us all the information we wanted. He is hopeful of the ultimate success of Parry's process, and thinks that there will be many advantages in it over the Bessemer process. But notwithstanding this, he is now erecting one of the most extensive Bessemer works in the world. In fact, Bessemer steel works are going up all over the country, and we have not been to a single one of them. In operation which was not also at the same time being enlarged. This establishment is fully up to the times, and we found all the modern improvements here, and nothing looks dilapidated, as everything does at Nant-y-Glo. We saw coal and iron ore raised from the pits within stone's throw of the furnaces and mills. Nature has done much for the iron manufacturers here, and they have availed themselves of it. When we in Schuylkill county understand and take advantage of our resources, a new era in iron making will commence, which will be the ruin of the great coal and iron country of the West. At Telford's works there are 18 blast furnaces, 100 puddling furnaces, and 70 heating furnaces. The present produce is about 2000 tons of rails and bars per week; can make 2500. In the rolling mills are 19 trains and 4 blooming mills. The machinery here is all first-class, and looks modern. The steel works are the best conducted I have seen yet, and turn out 230 tons of steel rails per week. There are extensions of these works under way, almost completed, which will increase the yield to double what it is now. We got samples of steel rails here, and made valuable information. In fact, at all the works we visited in Great Britain we got samples of the best quality, with the greatest purity, and made up our minds to get the best quality in getting information. We have always been candid, and stated what our object was in visiting the works, and have been as candidly answered. At Cyfarthfa are 11 blast furnaces, 78 puddling furnaces, and 70 heating furnaces; 5 forge trains, and 7 finishing trains. The produce is from 1800 to 2000 tons per week. This for order and cleanliness is the model mill of South Wales—probably in the world. The yards are swept clean, and the puddle bars piled in the shape of houses, and the piles each 300 tons, set in rows like a street. There is nothing out of place in the mills or yards, and it is the very reverse of Nant-y-Glo. I suppose to be the best place in the world. There is an Englishman, Mr. Dowlais for instance, one of the rails for Egypt, but the great complaint here is scarcity of orders, and many mills are working on stock, as they call it—piling up puddle bars, so as to be ready for large orders when they do come. All makers here look with fear and apprehension to an increase of the duties on iron in America. I believe they will tumble to pieces if we got a proper tariff. There is a bad feeling here against us, but they can't live without us. The only reason of their sympathy for the South during our rebellion was that the southern people were generally in favour of free trade. If we had pauper labour, as they have here, we would not need a tariff, but we prefer a tariff to pauper labour.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

OCT. 11.—The general state of trade in North Derbyshire continues active, but there is every appearance of a storm at no distant date. The ironworks are kept fully going, but, as the ironstone miners at the Hopewell pit received 28 days' notice to leave on Saturday last, the prosperity which has so long attended the workmen belonging to the Staveley Iron and Coal Company is evidently about to depart. There is a good business being done at the Clay Cross Collieries, and the heavy tonnage which for a considerable time past has been forwarded to London and the South is fully maintained, the quantity sent to the metropolis alone averaging nearly 1000 tons for every working day. At the Devonshire Silkstone Colliery, Mr. Pease is actively pushing forward the top works, and expects to have a finished shortly after Christmas. At present they are drawing to some small extent, and have got a number of their coke-ovens in work. The Cobnar Wood Colliery remains in the same state in which it has been for a considerable time past, and so far there has been nothing heard of the new company which it was expected would take to the concern. It will doubtless, therefore, still be in the hands of the Finance Company, who are the mortgagees, and whose claims will have been very unsuccessful. The speculation has turned out most disastrous for the shareholders, although it was inaugurated by a flourish of trumpets of more than ordinary loudness. As all the money has been sunk, the shareholders have long since bid adieu to all thoughts of ever getting anything back.

The successful endeavours of the Yorkshire Miners' Association to form a Union in Derbyshire appears likely to lead to one of the most severe struggles between capital and labour which has been witnessed in some years past. The manager of the Staveley Company some time since addressed the workmen, and pointed out to them the advantages they had long enjoyed under the firm, and wished them to renounce the idea of joining the Union, assuring them that he should do all that laid in his power to promote their interests. He also noticed the frequent interruptions to trade and to the good working which should exist between employers and employed by Trades Unions, which had done more to retard the progress of the working man than almost anything else. Notwithstanding such appeals, the men determined to join the Union, and this decision they were warmly seconded by the Yorkshire Miners' Association, which held meetings almost daily, pointing out what they had done in South Yorkshire by combination—how they had reduced the hours of labour and obtained a great victory over one of the largest firms, to do which they had maintained some hundreds of their men for a period of nine months. This a

was taken, and at the present time nearly 3000 of the Staveley miners are members of the Union. They have been desired not to give cause for any dispute, but to be the defensive; and that, should their employers place them in an antagonistic position to the men, the influence of 45,000 miners will be brought to bear against them. The company, as before stated, is one of the largest in the kingdom, employing about 6000 men, nearly 3000 of whom are engaged in the mines, and its dividends have been so large since it emerged from the hands of the late Mr. Barrow that its shares, on which 60s. are paid, are quoted at 144s. Besides the company alluded to, it is said that the proprietors of the Clay Cross and other collieries in the district are prepared to act on the defensive, and that a meeting would be held in Derby for the purpose of taking it into consideration on the part of the masters. The issue is looked forward to with combined interest, not only by those residing in Derbyshire, but by the coal-trade in nearly all parts of the kingdom, and in Yorkshire in particular, where the coal proprietors so well understand the working of the Miners' Association, and what it has done for them.

In South Yorkshire the Iron Trade continues tolerably brisk, and several of the large houses are well up in orders, but the heavy stocks of pig made during the depression has caused puddlers to be only moderately brisk. Pipes continue in good request, and there is a fair business being done in cold-blast iron for heavy plates. For the North of Europe and the United States there is an active trade being done in hoops, sheets, and bars, but there is a very moderate enquiry indeed for rails. The large steel works are all kept fully going, the demand for ordinary qualities and Bessemer being very large, especially for tyres and axles, as well as for rails of the last-named make. At Penistone business is very brisk indeed, and the company during the last six months have made very extensive alterations indeed, enormously increasing their power of production. The company have just made a fresh call of 7s. 10s. per share, making the fifth of the same amount.

At Milton and Eleazar business is proceeding satisfactorily, and the Messrs. Dawes have just completed the two largest blast-furnaces in the kingdom, for the Rosedale and Ferryhill Company, near Newcastle. They are 102 feet high, the iron casing being 32 feet at the bottom, and 21 feet 6 inches at the top. It is generally believed that the large furnaces are the most economical, and the company above alluded to are about having some still larger ones put up.

The Coal Trade of South Yorkshire continues in the same state of activity which has characterised it for a considerable time past. In Silkestone Colliery, coal and nuts the demand was scarcely ever so great, and the London and South Country markets taking a large tonnage, whilst no inconsiderable quantity is being forwarded into Lancashire and other places for locomotive and other purposes. Barnsley, "hard" and "softs" also find a ready sale, and so brisk has it been that of neither quality is there any stock, or likely to be, until the closing of the Northern ports for the season, and the laying up of the steamers employed there, for the winter months. Steam coal is in good request for the iron-works at Leeds, Lincolnshire, and other places, whilst a good deal is being forwarded to Hull and Grimsby for exportation to the Baltic. For Lancashire there is a very fair business being done in engine fuel and nuts, via the Manchester, Sheffield, and Lincolnshire Railway. Coke, most of which is now made from slack and smudge, meets with a ready market, and all that is made finds immediate sale. In Lancashire side of the county, the coal trade is not so brisk, but several of the furnaces are out of blast, owing to repairs.

During the past week circumstances have arisen in the South Yorkshire district which are calculated to produce a very unfavourable impression on the minds of the men not connected with the Union; indeed, it would appear that the Miners' Association is complete master of the situation, and is in a position to enforce any demands which it feels inclined to make. In fact, it is generally admitted that the association has achieved a most important victory, and it must be credited with bearing its honours very meekly. It will, perhaps, be remembered that the men belonging to the extensive collieries of Messrs. Newton, Chambers, and Co., at Chapelton, were out of strike for upwards of nine months, for a uniform increase of 5 per cent. In their wages. After being out so long, the firm concerned in the demand, and it was arranged that the men should resume work on Sept. 18. On the morning of that day, the old hands went to one of the pits, and, seeing a number of the "black sheep" there, assaulted several of them, which led them to take refuge in the lamp cabin. This was taken by assault, and several of those inside seriously injured, one man having two of his ribs broken. Consequently, warrants were taken out, and seven of the principal taken into custody during last Friday night. Next morning all the men refused to descend to work unless the men taken into custody were admitted to bail. Strange to state, the "firm" agreed to what was asked, and the men were liberated from the Barnsley lock-up on Saturday night. Strange still, when it has been agreed that the warrants shall be withdrawn. It has not transpired whether the man who worked for the firm when others had refused to do so, and had two of his ribs broken for so doing, has received any compensation; but it may be he has volunteered himself a victim at the shrine of peace. The effect will be to show the non-Union men that there is no protection from violence except by belonging to the Union, as the masters appear unable to afford them any, and even go so far as to prevent common justice being done to them. Another matter has taken place at a few collieries in the same district by surprise. It has been the custom of the men—as it has been of the masters—to give 21 cwt. to the ton, but the manager of one of the largest concerns has just conceded to the demands of his workpeople, and reduced the ton to 20 cwt., which is nearly equivalent to an advance of 5 per cent. Other colliery proprietors have been asked for a similar concession, and it is not unlikely that they will have to grant it. At the Wombwell Main Colliery the horse-keepers and trappers struck about 10 days ago for an advance of wages, and, despite the efforts of the men, a few colliery proprietors in the same district on Monday, having been informed that what they asked would be taken into consideration. So much for demands and concessions.

The neighbourhood of Barnsley has been in a state of considerable excitement during the week owing to the apprehension of Mr. John Clarkson, late manager of the North Gawber Collieries, on a charge of embezzlement. His defalcations are stated to amount to about 5000l. On Monday last he was brought before the sitting magistrate at Barnsley, and remanded until Monday next. On an application of the prisoner's counsel, the magistrate said that he should require bail in the sum of 10,000l. to allow him to have his liberty until the day of hearing. Up till to-day bail has not been accepted. Mr. Sutton is very respectably connected, and the position in which he has placed himself has caused general regret.

The Penk Forest Mines annual meeting was held on Wednesday, at the Star Hotel, Sheffield, Mr. Pitt in the chair. During the past twelve months 171 tons of ore had been sold, realising 2150l., the greater part of which had been raised during the past six months. The records and traditions of the mine as to its rich westerly bearing are fully borne out, and patent to all who have examined the lode; and as the westerly run of the vein is all but unaltered, the shareholders may now be congratulated on the perseverance they have evinced throughout in prosecuting the undertaking to a point when ample means for the outlay may be confidently expected, more especially as there is a full staff of hands in relays engaged, from the want of which inconvenience has been experienced.

At the Smalley Petty Sessions, on Monday, Mr. Philip Potter, the owner of the Rutland Colliery, at Ilkstone, was fined 10l. and costs for not having given notice to the Inspector of the district (Mr. Thomas Evans) of an accident in his colliery, by which a man was killed on August 8. His underservant, John Smith, was ordered to pay expenses for not having put up a notice signal, to denote that he had examined the workings.

Messrs. John Brown and Co., Atlas Works, Sheffield, have forwarded several hundred tons of the 9-in., 6-in., and other descriptions of armour-plates to Chatham, to be used in plating the iron-clad frigate *Hercules*, 1200-horse-power, under construction at the dockyard. The plates are of rolled iron, and those of 9-in. thickness are the largest yet manufactured for an English iron-clad, although plates of 13-in. in thickness have been rolled by the same firm for the Russian Government. Additional machinery, of a most powerful description than any ever used in the Dockyard, has recently been set up for planing, bending, boring, and otherwise preparing the plates in readiness for their being bolted to the vessel's side.

In July, 1865, Messrs. Briggs, of the Whitwood and Methley Collieries, near Leeds, converted their business into a limited liability company. This, however, was not the only change they made. To adopt their own words, they endeavoured to see "whether or not it was possible to unite two great interests which so frequently clash, and which are said to be antagonistic to each other—capital and labour." With this view, the company made a new arrangement with their workpeople. It was first decided that they should pay a rate of wages equal to the average rate of the district. In the next place, they determined upon paying a dividend (supposing it to be earned) to the shareholders, and this was fixed at 10 per cent. In the third place, they agreed if the profits exceeded 10 per cent, upon the capital the excess should be divided equally between the shareholders and the workpeople: the latter receiving their proportion in the form of a percentage upon their wages. Upon this principle the company has been conducted; and, as was stated in last week's Journal, at the request of the workpeople, the shareholders, workmen, and friends met "to celebrate the successful completion of their first year's working under the principle of co-operative partnership between employer and employed." The statements then made inform us that the arrangement between the company and its workpeople has proved in all respects satisfactory. The shareholders have received 12 per cent. instead of 10, nearly 2000l. has been divided by way of bonus, among the workmen; and Mr. Henry Briggs, a member of the old firm, told the meeting that "as a partner in the colliery, the dividend he had received was larger than any he had received even in the most prosperous of previous years." The actual money gain, both to employers and employed—considerable as it is—does not, however, represent the full benefit which has resulted from this new arrangement. One of the business men said that if he were called upon to mention the most unsatisfactory business he had known during an experience of 45 years, he should say it was the coal trade in the West Riding of Yorkshire. "It had been, year after year, a rivalry between the masters and the workmen; it had been turn-outs, strikes, and war, and malice, and bitterness between the employers and the employed." A gloomier picture can scarcely be imagined; though events which have happened nearer home will enable us to realise it—even in some of its darkest shades! Messrs. Briggs, it seems, had their full share of these troubles. Mr. Hughes recalled the little to the memory of the assembly. "The first time I heard the name of Briggs his workmen suspected that he should ever have to congratulate that gentleman and not afflige to such a union as this being established between them. He would only say that from what I look at place in those times he was perfectly aware that the coalmasters fought a very hard battle with their men in this part of England, and that the man who was fighting, perhaps, most bravely and strongly against his men was the very man who occupied the chair that evening." Mr. Fawcett added another touch to the sketch—"Only three years ago what was the position of Messrs. Briggs' firm? One year their profits had been reduced to 3½ per cent.; another year they had been reduced to 4½ per cent. What would have been the result if that state of things had continued? Why, of course, they would have closed their collieries." The system of co-operation,

we are told, has changed all this. As we have seen, the shareholders' dividend of 12 per cent. under the new system presents an agreeable contrast to the former proprietors' dividend of 3 or 4 per cent. under the old system. Not only so, but there have been no strikes or other difficulties between employers and workmen. On this point we once more quote Mr. Hughes—"Economy had been largely practised during the year; greater care had been used in the work; the business has been made, as it were, self-conducting; and, above all, profound peace had existed amongst all employed at the collieries. He might safely say that whilst things went on as this did at present, there would be no more trouble about strikes amongst all concerned with Briggs and Company." A working colliery, one Joseph Pyrah, gave similar testimony. In his own simple way, he said "he had known much of strikes and lock-outs, and had fought hard for labour, and contended again and again for a fair day's wages for a fair day's work. As soon as that scheme had been propounded to him he said he would throw his own soul into it, and do what he could for its success. What he had done he did not regret. A great deal of abuse had been thrown upon them, but they had a tangible proof of their success in the dividends they carried in their pockets. So far as the scheme had gone he believed it to be the best out. It was the first of the kind, and his conviction was that the company would succeed through the union between masters and workmen."

HOW COLLIERY EXPLOSIONS ARE CAUSED.—A case came before the Huddersfield magistrates on Saturday, which tended to show how colliery explosions may be caused in cases where there is great loss of life and no one is left to explain what was the immediate cause of the disaster. Jasper Brook, a miner, for 13 years employed in a colliery at Fieldhouse, near Huddersfield, belonging to Mr. E. Brooke, was charged with having unscrewed the top of his safety-lamp and worked in the pit with a naked light, contrary to the regulations of the colliery. He pleaded "Guilty." It appeared that he was working in the pit within 10 yards of a place which was considered dangerous on account of the gas, and where the ordinary danger signals were placed, and he unscrewed the top of his safety-lamp and worked with a naked light, although there were in the pit at the time no less than 67 men and boys, whose lives he thus placed in jeopardy. A short time ago some colliers from the same pit were fined for a similar offence; and now, at the request of Mr. Dransfield, who prosecuted, the Bench sentenced the defendant to one month's imprisonment, without the option of paying a fine, and observed that a repetition of the offence would lead to the offender being sent to prison for three months.

NEW PROCESS IN THE MANUFACTURE OF WHITE LEAD.—White lead is one of the staple products of almost every necessity. It has long been in use as the basis of nearly all the pigments employed in oil painting, few, if any, of the colouring bodies having the qualities that are required for painting in oil; and although, from its susceptibility to discoloration on the slightest contact with sulphuretted hydrogen, and also from its poisonous character, substitutes for it have been eagerly sought after, as yet nothing has been found to supersede it. Anyhow, oxide of zinc has to a certain extent been introduced, but does not appear to make any way. It has not an equal covering quality with carbonate of lead; but its chief defect is its want of permanency. White lead forms an almost indestructible compound with the oil, while oxide of zinc forms only a mixture. The various modes that have more or less been adopted in the manufacture of white lead are historically known to those interested in chemical manufactures. Almost all of these processes are based on the action of acetic acid upon lead or lead oxide, with the exception of the process patented by Pattinson in 1841, which is founded on the decomposition of the chloride by alkalies or alkaline earths, such as lime or magnesia. Practically, this process is now confined to the production of oxychloride of lead, which seems to act with oil to a great extent like white lead. The oldest, most successful, and most generally practised mode of producing white lead is that called the Dutch process; by this mode the object is accomplished by placing castings of pure lead of a suitable form over another in stoneware pots, in the bottoms of which acetic acid or vinegar is poured; the pots are then loosely covered and piled in masses, the whole being then covered over with spent tan, or some other slowly fermenting body, which will generate a small degree of heat for a considerable period. This evaporates the acetic acid, which acts on the lead, oxidising it and partially carbonating the oxide, and in about eight weeks the greater part of the lead is corroded and converted into oxide and carbonate of lead, the acetic acid is spent, and the crude lumps of white lead are ground, any metallic lead left being picked out, and after washing, the article is ready for use. Nearly all the white lead now made in this country is by this mode. The German and Austrian process is the same in principle as the Dutch, but differs in detail. A good many attempts at the manufacture of white lead have been founded on the fact that acetate of lead in solution has the property of dissolving lead oxide, forming a basic compound. My reasons for presenting to the Chemical Section of the British Association a process which may at first sight appear only as one of the many futile attempts to improve upon the established mode of producing white lead are two—First, that the process is new, being in altogether a different direction from any attempt that I can find recorded, and although based upon a known law, yet that law never having been applied to this process, it is technologically a discovery. My second reason is, that a very important feature of the process distinguished from all others, is that by it white lead can be manufactured from materials now useless. All other modes deal either with the purest metallic lead or equally pure oxide of lead. Pattinson's process must deal with the purest galena, free from iron or copper, or the chloride of lead must subsequently be freed from contamination by these metals or others before it is used for the precipitation of oxychloride. By the process I shall now describe, any ore or mineral that contains 8 or 10 per cent. of lead is sufficient for the production of white lead, and it is of no consequence what other metal the mineral contains; the process separates the lead directly without touching the other constituents of the mineral, and the white lead is perfectly pure. This being so, practically, I expect that all the white lead required may be made from ores or minerals now consigned to the rubbish heap as being too poor to work; and I know of large quantities of minerals useless as lead ores which will be economically adapted for the production of white lead. The process is based on the fact that oxide and carbonate of lead are soluble in solutions of caustic soda or potash, and are insoluble in the caustic alkali solution. The process, therefore, is effected by taking any mineral that contains oxide or carbonate of lead, or lead in any form that can be calcined or otherwise be converted into oxide or carbonate of lead, and by either macerating or boiling the mineral in a caustic solution all the lead is dissolved and extracted in a limpid and colourless solution. If the mineral contains oxide of iron, copper, or zinc, the caustic solution does not touch any of these oxides, and only attacks the lead. The lead solution has now passed into its carbonate acid gas, by which the alkali being carbonated, the lead is instantly precipitated as oxide and carbonate. The alkaline solution is now causticised by quick lime, and is ready for a second action on mineral containing lead oxide. The precipitated white lead has only to be washed to separate the solution of the carbonated alkali, and then dried for use. A sample of it is on the table. It has been tried for painting, and is said by the painter, who had it used in various ways by his workmen, to be equal to any white lead he could procure. It has also been tried as a glaze in the pottery, and declared to be equal to any white lead the firm had in stock. As the process, at least in the laboratory, is a rapid one, if it would at all gratify the Section, I have the materials at hand, and can show it all in half an hour. The substance from which I shall now extract pure white lead had the following composition before calcination. I have brought the materials already calcined, as the calcination could not have been done here. Analysis:—Zinc, 30.656; sulphur, 26.483; silica, 19.154; lead, 13.148; iron, 9.121; copper, 1.027; alumina, 0.216; silver, 0.022; moisture, 0.122; total, 99.949. —PETER SPENCE: British Association.

IMPROVING MINERAL AND OTHER PIGMENTS.—A very ingenious mode of improving the brilliancy of pigments, by changing their mechanical qualities and freeing them from gaseous and other impurities, has been patented by Mr. STUART Gwynn, of New York. He first prepares a bath of oil, superheated steam, or other suitable fluid, in which the pigments to be treated are stirred and heated, during which heated air, gases, or vapours are injected into them. The heat required will vary with the pigment under treatment. Carmine requires the least, say 150° Fahr., while some require 1000° or more. Oxide of zinc, if too coarse, may be 500°. The bath is 500° Fahr. The carbon colours require about 600°, sulphate and carbonate of lead about 800°, and the iron oxides and some other metallic pigments about 1000° or over. Practice will enable the expert, after a few tests, to obtain with certainty the best results. The pigment is now removed to a pneumatic, hydrostatic, or mechanical press, and subjected to a concentrating power of from 2 to 8 tons per inch of area. This concentration is effected either in elastic bags or in very strong cylindrical vessels, or by preference in open-ended steel tubes, out of which the pigment will be discharged, after the manner of macearoni.

MANUFACTURE OF GAS.—An invention has been provisionally specified by Mr. G. R. MALHERBE, of Rue Trokay, Liège, according to which it is proposed to employ atmospheric air charged with vapour of volatile hydrocarbon, such as are prepared from earth oil or petroleum. He employs a vessel, in which are placed a number of shelves, supporting wicks or like absorbent materials, such as cotton or sponge. The hydrocarbon is poured in at the top of the vessel to the upper shelf, from which it descends to the others. This vessel is immersed in a cistern of water, which is kept tepid conveniently, by means of a gas flame. Air is forced into the vessel by suitable machinery, and is caused to pass over the wicks, and thus the air becomes fully charged with the vapour, and is then inflammable; a suitable pipe or pipes connected with the vessel leads the gas to the burners. The amount of hydrocarbon vapour supplied to the air to render it inflammable can be adjusted either by regulating by a cock, the air passing to the vessel, or by regulating the size of the flame which heats the water-cistern.

MOTIVE POWER.—Mr. VICTOR RASTOUIN, of Paris, proposes that one fly-wheel shall drive another, and thus render a greater amount of power available for use; he has numerous connecting-rods and joints to increase the friction, and considers his arrangement applicable to steam and other engines.

PERPETUAL MOTION.—A description was some time since published in the *Mining Journal* of a proposition made by Mr. Charles Boutet for producing perpetual motion by the alternate inflation and compression of wind-bags, which, it is needless to say, was never carried out, yet precisely the same contrivance has been provisionally specified by Mr. E. FERRE, of Manchester, who states that according to his invention a large revolving wheel is employed on a shaft supported in bearings, and a number of radial arms, upon each of which an air-chamber or bag is secured, the moveable or top portion of each being supplied with weights which are firmly secured thereto; these weights form an equilibrium or balance on the wheel, but when in motion the air-bags, ascending from the lower to the top centre of the wheel, are caused to expand and inflate with air by weights when in that position being hung therefrom, but in descending the weights rest upon and compress the air from such bags, which being received through tubes communicating with a common thoroughfare become discharged into a second arrangement of air-chambers, one end of which being moveable and the other fixed give motion, as the pressure of air is received and discharged through perforations placed around the axis of the said wheel, one-half the number of holes being constantly exposed to receive the air, and the other half being covered by a receiver or thoroughfare to which each bag is connected, and through which the air is expelled to the arrangement of bags, and giving motion to the crank, as aforesaid.

Memorial to the late Nicholas Wood, Esq.

MEMORIAL TO THE LATE NICHOLAS WOOD, Esq.—A PUBLIC MEETING OF THE COAL TRADE and others will be HELD in the Neville Hall, Newcastle-on-Tyne, on SATURDAY, October 13, 1866, at Twelve o'clock noon, to receive the Report of the Committee appointed to consider the best mode of applying the Fund; and also to decide as to the nature of the Memorial to be erected.

JOHN TODD, Hon. Sec.,
Hetton-le-Hole, Fence Houses.

Royal School of Mines, Jermyn-street.

DR. PERCY, F.R.S., WILL COMMENCE A COURSE OF FIFTY LECTURES ON METALLURGY, at the ROYAL SCHOOL OF MINES, JERMYN STREET, on MONDAY next, the 15th October, at half-past Eleven, to be continued on each succeeding Tuesday, Wednesday, Thursday, and Monday, at the same hour. Fee for the course, £4.
TRENHAM REEKS, Registrar.

NOTICE IS HEREBY GIVEN, that the OFFICES of the LEVANT UNITED MINES and DEAN PRIOR SLATE QUARRY COMPANIES will be REMOVED on and after Saturday, October 13th instant, to more convenient premises, at 12, NORTH BUILDINGS, ELDON STREET, FINSBURY, near the Broad-street Terminus.
By order of the committee, GEORGE CARNE, Manager.
139, Leadenhall-street, London, E.C., 10th October, 1866.

CARBERRY MINING COMPANY (LIMITED).—The Liquidators of the Carberry Mining Company (Limited) are PREPARED to ENTER INTO NEGOTIATIONS for the DISPOSAL of the company's mines, consisting of the Gurtavallig Copper Mine sett, situated on the shores of Bantry Bay, County of Cork. These mines are the nearest in point of position to the celebrated Berehaven Mines, and offer the strongest inducements for the judicious investment of capital.
Full particulars may be obtained by addressing the Liquidators of the Carberry Mining Company (Limited), 29, Westmoreland-street, Dublin.

THE CWT-Y-BUGAIL SLATE COMPANY (LIMITED).—NOTICE OF CALL.—FIFTH CALL OF £5 PER SHARE, MAKING £35 PER SHARE PAID.—Notice is hereby given, that the Board of Directors of the Cwt-y-Bugail Slate Company (Limited) have this day made a CALL OF FIVE POUNDS PER SHARE on the shares in their Company, payable on the 24th inst., at Messrs. Roberts, Lubbock, and Co., London; or Messrs. Williams and Co., Chester, Bangor, and Carnarvon. Shareholders are, therefore, requested, on or before that date, to pay the amounts on the shares of which they are the registered proprietors.
JOSEPH HAYWOOD, Managing Director.
Bangor, October 1, 1866.

THE WICKLOW COPPER MINE COMPANY.—Incorporated by Act of Parliament.
At the HALF-YEARLY MEETING of the proprietors of the above company, held at their offices, 113, Grafton-street, Dublin, on Saturday, the 6th October, 1866, EDWARD WRIGHT, LL.D., in the chair.
The notice convening the meeting having been read by the secretary, the common seal of the company was affixed to the register of shareholders.
The following resolutions were then proposed and adopted:—
Moved by the CHAIRMAN, and seconded by THOMAS GOGHEGAN, Esq., and resolved:—
That the directors' report and statement of accounts for the half-year ended 1st September, 1866, be received and adopted.
Moved by the CHAIRMAN, and seconded by CHARLES HENRY CHAYTOR, Esq., and resolved:—
That a dividend of 18s. per share, free of income tax, be declared for the half-year ended 1st September, 1866, payable to the proprietors now registered in the books of the company, on 15th October instant.
Moved by the CHAIRMAN, and seconded by the High Sheriff, RICHARD MARTIN, Esq., and resolved unanimously:—
That John Burton, Esq., and Charles Henry Chaytor, Esq., be re-elected directors of the company.
Moved by the CHAIRMAN, and seconded by OCTAVIUS O'BRIEN, and resolved:—
That Robert Callwell, Esq., and Thomas Worthington, Esq., be re-appointed auditors for the ensuing year.
WM. S. KILDAHL, Secretary.
Moved by ROBERT O'BRIEN, Esq., and seconded by MARCUS HUGHES, Esq., and resolved:—
That a special vote of thanks be accorded to the Chairman and directors for their great attention to, and successful management of, the affairs of the company.
WILLIAM S. KILDAHL, Secretary.

MESSRS. WEBB, WADGE, AND CO., MINING ENGINEERS, AGENTS, AND SHAREDEALERS, PLYMOUTH.
(Late Edwin H. Wadge, from Clarence Chambers, Manchester.)
WEBB, WADGE, AND CO., occupying as they do a central position in the mining districts, will be enabled to acquire authentic information on all mining properties, and to advise their clients with the utmost correctness and punctuality. They will be also able to faithfully report the progress and exact position of the various mines in which their clients have embarked.
The personal attention of our Mr. Wadge may be always relied on.

MR. ERWIN HARVEY WADGE, F.G.S., of STRADBROOK HALL, BLACKROCK, COUNTY DUBLIN, finds it necessary to point out that he is NOT the MR. WADGE of the FIRM of WEBB, WADGE, AND CO., of PLYMOUTH, with which he has NOT THE SLIGHTEST CONNECTION. This announcement is not made with any disrespect to, or prejudice of the respectability of, Messrs. Webb, Wadge, and Co., but purely to prevent such a confusion of persons as the extraordinary similarity of two names (the initials being identical) gives rise to.—Stradbroke Hall, June 21, 1866.

NOTICE.—CAPT. S. M. RIDGE, of LLANIDLOES, MONTGOMERYSHIRE (late manager of the Brynastig and Cwm Fron Mines, and others, in Shropshire and Wales), is NOW OPEN to INSPECT and faithfully REPORT UPON ANY LEAD MINE in either of these localities that may be confided to his care, having had better than 30 years' experience in lead mining, as miner and agent.—Address, Capt. S. M. RIDGE, Llanidloes, Montgomeryshire.

CAPT. JOHN ROBERTS, who has just returned from Brazil, and who has spent eighteen years in gold mining in Brazil, New Granada, &c., now OFFERS himself to INSPECT any MINES in or out of Great Britain. Capt. ROBERTS would have no objection to a permanent situation.—Address, Hotel, Schull, co. Cork, Ireland.

CAPT. RICH. BODMIN, CORNWALL, being in the centre of the mining districts of Devon and Cornwall, and having had 25 years' experience in the management and inspection of mines, OFFERS HIS SERVICES to INSPECT and REPORT on MINES in either of the above counties. Orders promptly attended to.

TO MINE, SLATE QUARRY, AND RAILWAY COMPANIES.—CAPT. C. WILLIAMS is NOW OPEN to UNDERTAKE ALL KINDS OF CONTRACTS, such as DRIVING LEVELS, SINKING SHAFTS, CONSTRUCTING WATER COURSES, CANALS, TRAMWAYS, &c., and ERECTING ALL SORTS OF MACHINERY for MINING and OTHER PURPOSES, having on hand at all times a first-class staff of miners and machinists, who will proceed to any part of the world upon the shortest notice.
N.B.—In all cases 30 per cent. will be left in hand until the work is complete.
Tyn-y-Wern, Taliesin, via Shrewsbury.

ROBERT LIBBY AND SON, MINE AND SHAREDEALERS, CAMBORNE, CORNWALL.
The following Mines should be bought at once, for a great rise in price, as the indications in each will specially recommend them at the prices annexed:—
Cook's Kitchen £4½ - 4½
Clifford Amalgamated £9½ - 10
South Crofty 13 - 14
North Crofty 20s. - 25s.
Camborne Vein 20s. - 25s.

MR. CHARLES BAWDEN, POLDICE, ST. DAY, SCORRIER, CORNWALL, begs respectfully to inform his friends and the public that, in addition to his Mining Business, he has commenced that of an AUCTIONEER and APPRAISER, and any sales entrusted to him shall receive his careful attention. Mr. CHARLES BAWDEN's long connection with the Mines of Devon and Cornwall, in the purchase and sale of materials, specially qualifies him for the valuation of all kinds of Mining Machinery, &c.

MINING OFFICES, MANCHESTER.
THOMAS MOLYNEUX AND CO., MINE AGENTS AND SHAREBROKERS. Reliable information can be obtained as to purchase and sale of shares.
Offices of the Elton United Copper and Zinc Mining Company (Limited), and Hazel Grove Silver Lead Mining Company (Limited). THOMAS MOLYNEUX, secretary, 28, Princess-street, Manchester.

MANCHESTER, AND WEST END OF LONDON.
MR. W. HANNAM, MINING, SLATE QUARRYING, INSURANCE, AND GENERAL SHAREBROKER.
ROYAL INSURANCE BUILDINGS, KING STREET MANCHESTER; and 31, REGENT STREET, LONDON, S.W.
INSTANTANEOUS COMMUNICATION with the STOCK and MINING EXCHANGES, avoiding the delay and annoyance of visiting the City to ascertain prices. A Monthly Investment Circular on application.

NOTICE OF REMOVAL.
MESSRS. TREDINNICK AND CO., DEALERS IN STOCKS AND SHARES.

MR. RICHARD TREDINNICK, MINING ENGINEER AND CONTRACTOR.
MR. THOMAS TREDINNICK, SCRIVENER.

OFFICES.—ST. MICHAEL'S HOUSE, CORNHILL, LONDON.
The business hitherto conducted at 78, Lombard-street is transferred to the above address.
Stocks, Shares in Banks, Railways, Canals, and Insurance Companies dealt in, and Money Advanced upon all sound Securities. Principals alone treated with.

SPANISH COAL MINES TO BE LET OR SOLD, IN THE PROVINCE OF ASTURIAS, SPAIN, comprising:—
 1st.—About 500 HECTARES (1200 acres) OF COAL MINE; 30 exploitable beds of coal and lignite, whose average depth is 80 centimetres (about 2½ feet). Exploitation without wells, beds of 45° inclination.
 Two stations and 21 miles of railway leading to the Port of Gijón. Coal washing-machine, set in motion by steam-power, buildings, lands, materials, transport means, preparatory work, &c.
 2d.—About 450 HECTARES (1080 acres) OF IRON MINE, *oligiste colitique*, whose yield is 45 per cent. Purple ore of Belgium. Open air exploitation by two principal beds, whose depth is about 7 yards.
 Excellent basement for the establishment of forges and glass-works. Great facility of payment.
 Apply—At Paris, to Mr. BECKER, 85, Rue de Feuillantines; at Sama de Langreo, Asturias, Spain, to Mr. DIBOT, manager, who is disposed to take at least a quarter of the undertaking.

TO COAL PROPRIETORS AND OTHERS.—TO BE DISPOSED OF IMMEDIATELY, in the very best part of the coal field of South Wales (the property of Morgan Thomas, Esq.), EIGHTY ACRES OF ARABLE AND PASTURE LAND, with the farm-house, stabling, and other buildings suitable for farming purposes. The Taff Vale Railway runs through the centre of the property, which is most advantageous for colliery purposes. Underneath it abounds with the best steam and other coals, and it is within 16 miles of the town of Cardiff, one of the best markets in the world for coal. Three pits have been sunk to prove the measures of the seams, which are most valuable. The price of this most valuable property is only £3500. The farm is let at £45 a year, and £1000 can be left on mortgage by the present owner. For further particulars, apply to Mr. W. BURFIELD, Roath, Cardiff.

LEAD AND BLENDE SETT, CORNWALL.—The undersigned is authorised to OFFER A VALUABLE LEAD AND BLENDE SETT to an approved company, who would explore the lodes and work vigorously. One of the lodes has been worked to the 55 ft. level, and has yielded large quantities of good quality blende and some lead. The sett is extensive, and would be leased to an eligible company on liberal terms.
 Apply to Mr. JACOB OLVER, St. Mewda, St. Austell, Cornwall.

CHINA-CLAY SETT TO BE LET, on advantageous terms. The clay is first-class.—Apply to Mr. W. D. KING, solicitor, Camelford, Cornwall.

STEAM ENGINES FOR SALE:—60-inch PUMPING ENGINE, equal beam, 10 ft. stroke, with TWO 10-ton BOILERS; 36-in. CYLINDER SINGLE-ACTING ROTARY ENGINE, 14 ton fly-wheel, with 9 ton boiler; 18-inch CYLINDER DOUBLE-ACTING ROTARY ENGINE, with drawing gear, whelm cage, and 7-ton boiler, the whole in good condition, to be seen at Kelly Bray Mine, Callington, Cornwall.—For further particulars and price, apply to Mr. EDWARD KING, 22A, Austinfriars, London.

FOR SALE.—A SECOND-HAND PORTABLE OR TRACTION STEAM ENGINE, of 7-horse power; has reversing gear; with or without pit winding drum.—Apply to BARROWS and CARMICHAEL, Portable Engine Works, Banbury, Oxon.

PORTABLE STEAM-ENGINES (SECOND-HAND) FOR SALE, viz.—a 20-horse, by Kobey and Co., and a 6-horse, both in good working order; and four others, out of repair.—Apply to Messrs. MEAD and Co., 2, King's Bench-walk, Temple, London.

ANALYSES OF COAL, CANNEL, MINERAL OILS, and all OIL PRODUCING MINERALS ARE UNDERTAKEN by A. NORMAN TATE, F.A.S.L., &c., ANALYTICAL AND CONSULTING CHEMIST, and CHEMICAL ENGINEER (Author of "Petroleum and Its Products," &c.), MOLD, NORTH WALES. Plans and estimates for oil and chemical works prepared, and their erection superintended. Assays of metals and their ores carefully conducted.

PATENTS AT HOME AND ABROAD.—INVENTORS desirous TO SECURE INVENTIONS AND DESIGNS BY PATENT OR REGISTRATION, may obtain ADVICE AND INFORMATION by applying to Mr. HENRY, Memb. Soc. Arts, Assoc. Soc. Eng., Consulting Patent, Registration, and Copyright Agent, 68, Fleet-street, London, corner of and entrance in Whitefriars-street. Technical translations effected. Drawings and lithographs prepared.

WILLIAMS'S PERRAN FOUNDRY COMPANY, PERRANARWORTHAL, CORNWALL. MANUFACTURERS OF STEAM PUMPING AND EVERY OTHER KIND OF ENGINES, together with BOILERS, PUMP CASTINGS, and MINING TOOLS of every description, of the very best quality. Estimates given for the supply of any amount of machinery. London Agent.—Mr. EDWARD COOKE, 2, Crown Chambers, Threadneedle-street.

HUNT'S PATENT ORE SEPARATOR AND GOLD WASHING MACHINE.—Information respecting the above machines can be obtained on application to Mr. WILLIAM HUNT, 95, Bishopsgate-street Within, or Mr. JOHN HUNT, at his works, Portlaven, Helston, Cornwall.
 N.B.—Any person making or using the above machines, without previously obtaining a license, will be proceeded against according to law.

VULCANISED INDIA-RUBBER, FOR ENGINEERS AND MECHANICAL PURPOSES. VALVES—for Marine and Land Engines' Steam Packing, sheet or roll. DELIVERY AND SUCTION HOSE—for Brewers, Distillers, Fire-engines, Gardens, &c. MACHINE BANDS—for all descriptions of Machinery. GAS TUBING—with or without wire. GAUGE GLASS RINGS; WASHERS. Price Lists free on application. SOUTHWAIR INDIA-RUBBER COMPANY (LIMITED), 67, GRANGE ROAD, BERMONDSEY, LONDON, S.E.

COAL CUTTING MACHINERY.—THE WEST ARDSLEY COMPANY, having, by recently patented improvements, perfected their coal cutting machinery, worked by compressed air, are NOW READY TO MAKE CONTRACTS for the CONSTRUCTION and USE of their MACHINES. The results of twelve months' experience in the working of these machines, by the West Ardsley Company, have proved most satisfactory, their use being found to CHEAPEN the COST and IMPROVE the average SIZE of the COAL, to LIGHTEN the LABOUR, and also to MODIFY the SANITARY CONDITION of the MINE. All communications should be made to Messrs. FIRTH, DONNISTHORPE, and BOWER, No. 4, Britannia-street, Leeds.

NOTICE.—THE WEST ARDSLEY COMPANY, having reason to believe that their patents are being infringed upon, hereby give notice that they will TAKE LEGAL PROCEEDINGS AGAINST ALL PARTIES who may MAKE FOR SALE, or USE ANY MACHINERY in the construction of which any such INFRINGEMENT is MADE.

Swan Rope Works. GARNOCK, BIBBY, AND CO., CHAPEL STREET, LIVERPOOL. MANUFACTURERS OF FLAT AND ROUND HEMP AND IRON AND STEEL WIRE ROPES for MINING, RAILWAY, and SHIPPING PURPOSES. MANILLA ROPE of SUPERIOR QUALITY, FIFTY PER CENT. STRONGER and FIFTY PER CENT. CHEAPER than Russian hemp rope. WIRE ROPE of FIRST QUALITY WIRE, and the HIGHEST STANDARD of STRENGTH.

Patent Flat and Round Wire and Hemp Ropes, &c. JOHN AND EDWIN WRIGHT, PATENTEES, CITY OFFICE, 19, LONDON STREET, E.C. ESTABLISHED 1770. Manufacturers of every description of IMPROVED PATENT FLAT AND ROUND WIRE ROPES, From the very best quality of charcoal iron and steel wire. PATENT FLAT AND ROUND HEMP ROPES. SHIPS' RIGGING, SIGNAL AND FENCING STRAND, LIGHTNING CONDUCTORS, STEAM PLOUGH ROPES (made from Webster and Hardell's patented steel), WIRE, HEMP, FLAX, ENGINE YARN, COTTON WASTE, &c. UNIVERSE WORKS, MILLWALL, POPLAR, LONDON. UNIVERSE WORKS, GARRISON STREET, BIRMINGHAM. No. 2, OSWALD STREET, GLASGOW. CITY OFFICE, No. 19, LONDON STREET, LONDON.

THE MINERS' MANUAL OF ARITHMETIC AND SURVEYING. By WILLIAM RICKARD. Teacher of Practical Mining in the late Mining School of Cornwall, and Principal of the Engineering Academy, 36, Upper Parliament-street, Liverpool. Truro: Heard and Son.—London: Longman and Co.; the office of the MINING JOURNAL, 26, Fleet-street; of the author, and of all booksellers.

RAILWAYS AND MINES.—Capitalists who seek safe and profitable investments, free from risk, should act only upon the soundest information. The market prices for the day are for the most part governed by the immediate supply and demand, and the operations of speculators, without reference to the bona fide merits of the property. Railways depend upon the traffic, expenditure, and capital accounts, the probability of alliance or competition with neighbouring companies, the creation of new shares, the state of the Money Market as affecting the renewal of debentures, and other considerations founded on data to which those only can have access who give special attention to the subject. Mines afford a wider range of profit than any other public securities. The best are free from debt, have large reserves, and pay dividend bi-monthly varying from £10 to £15 per cent. per annum. Instances frequently occur of young mines rising in value 50% or 100% per cent. But this class of security, more than any other, should be purchased only upon the most reliable information. The undersigned devote special attention to Railways and Mines, afford every information to capitalists, and effect purchases and sales upon the best possible terms. Thirty years' experience in mining pursuits justifies us in offering our advice to the uninitiated in selecting mines for investment. Messrs. TREDINNICK AND CO., ST. MICHAEL'S HOUSE, CORNHILL, LONDON.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN THE MATTER OF THE COMPANIES ACT, 1862, and of the WEST WHEAL PROSPER MINING COMPANY.—ALL CREDITORS or CLAIMANTS of the ABOVE-NAMED COMPANY, who have not received notice from the Registrar of the said Court that their claims have been already admitted, are hereby REQUIRED TO COME IN and PROVE THEIR SEVERAL DEBTS or CLAIMS at the Registrar's Office, Truro, on Monday, the 22nd day of October inst., at Eleven o'clock in the forenoon, or in default thereof they will be excluded from the benefit of any distribution made before that proof.
 And for the purpose of such proof they are either to attend in person, or by their solicitors or competent agents, or (unless such attendance be required by the Registrar's summons) they are to send affidavits of their several debts or claims to the Registrar of the Court at Truro, such affidavits being sworn either before some Commissioner of the said Court, or before any Court, Judge, Justice, or any Commissioner of one of the Superior Courts, lawfully authorised to take and receive affidavits and affirmations.

WM. MICHELL, Registrar of the above-named Court, Truro, Cornwall.
 Dated Registrar's Office, Truro, October 9, 1866.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN THE MATTER OF THE COMPANIES ACT, 1862, and of the WEST CLIFFORD UNITED TIN AND COPPER MINING COMPANY (LIMITED).—TO BE SOLD, BY PUBLIC AUCTION, at and upon the WEST CLIFFORD UNITED TIN AND COPPER MINES, situate in the parish of Gwennap, in the county of Cornwall, under the direction of the Registrar of the said Court, on Monday, the 30th day of October inst., at Twelve o'clock at noon, subject to such conditions as shall be then and there produced, the several DEBTS or CLAIMS of the ABOVE-NAMED COMPANY, and all the MINING MACHINERY and MATERIALS at and upon the said mines, including:—
 ONE 80 in. cylinder PUMPING ENGINE, with THREE BOILERS about 11 tons each.
 ONE 26 in. cylinder WINDING ENGINE, with BOILER about 10 tons.
 3 balance-bobs, with wrought-iron connection pieces, and also the pitwork, together with the account-house furniture, and a variety of other effects in general use in mines, full particulars of which appear in hand-bills.

JOSEPH ROBERTS, Solicitor, Truro.
 Dated Registrar's Office, Truro, October 10, 1866.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN THE MATTER OF THE COMPANIES ACT, 1862, and of the NORTH HALLENBEAGLE TIN AND COPPER MINING COMPANY (LIMITED).—TENDERS will be RECEIVED at the Office of the Registrar of the said Court, on or before Wednesday, the 24th day of October instant, stating the highest price which will be given for the whole or any portion of the unsold MACHINERY, MATERIALS, and EFFECTS now lying at and upon NORTH HALLENBEAGLE MINE, in the parish of St. Agnes, full particulars of which may be obtained at the Office of the said Registrar.
 The above may be inspected on application to the bailiff in charge thereof at the mine.
 HODGE, HOCKIN, AND MARRACK, Solicitors, Truro.
 Dated Truro, October 10, 1866.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN THE MATTER OF THE COMPANIES ACT, 1862, and of the SOUTH ALFRED MINING COMPANY.—TENDERS will be RECEIVED by the Registrar of the Vice-Warden's Court, at Truro, until Wednesday, the 24th day of October inst., stating the highest price which will be given for the MINE SETTS or GRANTS, the MACHINERY, MATERIALS, and OTHER EFFECTS at SOUTH ALFRED CONSOLS MINE, in the parishes of Phillack and Gwinear, full particulars of which may be obtained at the Office of the said Registrar. For inspection, apply to Mr. WILLIAM MOSS, in charge thereof.
 HODGE, HOCKIN, AND MARRACK, Solicitors, Truro.
 Dated Truro, October 10, 1866.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN THE MATTER OF THE COMPANIES ACT, 1862, and of the SOUTH ALFRED CONSOLS MINING COMPANY.—The Registrar of the Court has appointed Wednesday, the 24th day of October instant, at Eleven o'clock in the forenoon, at the Registrar's Office, at Truro, to SETTLE the LIST of CONTRIBUTORIES of the ABOVE-NAMED COMPANY, now made out and deposited at the said office.
 WM. MICHELL, Registrar of the said Court.
 Dated the 10th day of October, 1866.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN THE MATTER OF THE COMPANIES ACT, 1862, and of the WHEAL WILLIAM MINING COMPANY.—Notice is hereby given, that ALL CREDITORS of the ABOVE-NAMED COMPANY are REQUIRED, on or before the 24th day of October instant, to SEND IN THEIR NAMES AND ADDRESSES, and the AMOUNTS and PARTICULARS of THEIR SEVERAL CLAIMS on the said company, to WILLIAM MICHELL, Esq., the Registrar of the said Court, at Truro.—Dated Registrar's Office, Truro, October 10th, 1866.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN THE MATTER OF THE COMPANIES ACT, 1862, and of the WHEAL WILLIAM MINING COMPANY.—TO BE SOLD, under the direction of the Registrar of the said Court, BY PUBLIC AUCTION, on Tuesday, the 23rd day of October instant, at Eleven o'clock in the forenoon, at WHEAL WILLIAM MINE, in the parish of Luxulyan, within the said Stannaries, either together or in lots, the MINE SETTS or GRANTS of the said company, and the undermentioned MINING MACHINERY and MATERIALS, viz.:—
 ONE 22 in. ROTARY ENGINE and fly-wheel. ONE BOILER, 8 tons.
 Iron stamps axle, stamps heads, bobs, several fathoms iron and bucket rods, and buckets; new whelm, 60 fms. whelm chain, kibbles, 12 fms. footway, plunger pole, stuffing box and gland, horse engine, pumps of various sizes, a quantity of new and old iron and timber, boulders, dressing shed, laundries, smiths' tools, and various other articles in general use in mines.
 The mines, machinery, &c., may be inspected on application to WILLIAM TRELVEN, the bailiff in charge thereof.
 HODGE, HOCKIN, AND MARRACK, Solicitors, Truro.
 Dated Registrar's Office, Truro, October 10th, 1866.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN THE MATTER OF THE COMPANIES ACT, 1862, and in the MATTER OF THE CRENVER AND WHEAL ABRAHAM UNITED MINING COMPANY (LIMITED).—Notice is hereby given, that a PETITION for the WINDING-UP of the ABOVE-NAMED COMPANY voluntarily, but subject to the supervision of the Court, was, on the 8th day of October instant, presented to the Vice-Warden of the Stannaries, by the above-named Crenver and Wheal Abraham United Mining Company (Limited), and that the said petition is referred to be heard before the Vice-Warden at the Law Institution, Chancery-lane, on Wednesday, the 31st day of October instant, at Twelve o'clock at noon.
 Any contributory or creditor of the company may appear at the hearing and oppose the same, provided he has given at least two clear days' notice to the petitioners, their solicitors, or agents, of his intention to do so, such notice to be forthwith forwarded to P. P. Smith, Esq., secretary of the Vice-Warden, Truro.
 Every such contributory or creditor is entitled to a copy of the petition and affidavit verifying the same, from the petitioners or their solicitors, within 24 hours after requiring the same, on payment of the regulated charge per folio.
 Affidavits intended to be used at the hearing, in opposition to the petition, must be filed at the Registrar's Office, Truro, on or before the 27th day of October instant, and notice thereof must, at the same time, be given to the petitioners, their solicitors, or agents.

CARLYON AND PAULL, Truro, Cornwall
 (Agents for Messrs. Kimber and Ellis, 199, Gresham House, London, Solicitors for the Petitioners).
 Dated Truro, October 11th, 1866.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN THE MATTER OF THE COMPANIES ACT, 1862, and of the CRENVER AND WHEAL ABRAHAM MINING COMPANY (LIMITED).—Notice is hereby given, that a PETITION for the WINDING-UP of the ABOVE-NAMED COMPANY by the Vice-Warden of the Stannaries by Humphry Williams, Edward Brydges Williams, Edward Sheppard Carus-Wilson, and Arthur Champion Phillips Williams, all of Truro, in the county of Cornwall, bankers and co-partners, and George Stoughton Arnall, of the same place, merchant, creditors of the said company, and that the said petition is directed to be heard before the Vice-Warden, at the Law Institution, Chancery-lane, London, on Wednesday, the 31st day of October inst., at Twelve o'clock at noon.
 Any contributory or creditor of the company may appear at the hearing and oppose the same, provided he has given at least two clear days' notice to the petitioners, their solicitors, or their agents, of his intention to do so, such notice to be forthwith forwarded to P. P. Smith, Esq., secretary of the Vice-Warden, Truro.

Every such contributory or creditor is entitled to a copy of the petition and affidavit verifying the same, from the petitioners, their solicitors, or their agents, within 24 hours after requiring the same, on payment of the regulated charge per folio.
 Affidavits intended to be used at the hearing, in opposition to the petition, must be filed at the Registrar's Office, Truro, on or before the 27th day of October inst., and notice thereof must at the same time be given to the petitioners, their solicitors, or their agents.

HODGE, HOCKIN, AND MARRACK, Truro, Cornwall
 (Solicitors for the petitioners).
 GREGORY, ROWCLIFFE, AND ROWCLIFFE, 1, Bedford-row, London
 (Agents of the said Solicitors).
 Dated Truro, October 11th, 1866.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN THE MATTER OF THE COMPANIES ACT, 1862, and of the WEST WHEAL PROSPER MINING COMPANY.—The Registrar of this Court has appointed Friday, the 19th day of October instant, at Eleven o'clock in the forenoon, at the Registrar's Office, at Truro, to SETTLE the LIST of CONTRIBUTORIES of the ABOVE-NAMED COMPANY, now made out and deposited at the said office.
 WILLIAM MICHELL, Registrar of the said Court.
 Dated the 1st day of October, 1866.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

In the Consolidated Causes of—
 TREGASKIS v. RABEY.
 READ v. SAME.
 BRAY v. SAME.
 SANDERS AND ANOTHER v. SAME.
 SANDERS v. SAME.

TO BE SOLD, pursuant to the several Orders made in the above-mentioned Causes, and dated respectively the 16th day of August last, BY PUBLIC AUCTION, at SOUTH WHEAL LEISURE MINE, in the parish of Perranzabuloe, within the said Stannaries, on Monday, the 23rd day of October inst., at Eleven o'clock in the forenoon, either together or in lots, the undermentioned MINING MACHINERY, MATERIALS, and OTHER EFFECTS, viz.:—
 ONE 24 in. PUMPING ENGINE, with BOILER complete.
 Capstan and shears, 10 in. capstan rope, balance-bob, pumps of various sizes, 1 windbore, 1 doorpiece, 1 8 in. stuffing box and gland, 1 6 in. matching piece, 30 fms. 8 in. plunger lift, 14 fms. of bucket lifts, 1 8 in. plunger tackle, 30 fms. of 8 in. rods, 10 fms. of bucket rods, horse whelm and rope shaft pole, pulleys of various sizes, laundries, bars of different sizes, smiths' bellows, anvil, vice, and tools, miners' tools, quantity of new and old timber, carpenters' bench, scale and beams, cross-cut and hand-saws, bucking mills, cast steel, and a variety of other materials in general use in mines.

For further particulars apply to the person in charge thereof.
 HODGE, HOCKIN, AND MARRACK, Solicitors, Truro.
 JOSEPH ROBERTS, Solicitor, Truro.
 Dated Registrar's Office, Truro, October 10, 1866.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN RE EAST PROVIDENCE MINES. TO BE SOLD, pursuant to an Order made in a Cause Hollow v. Hollow and Others, dated the 24th day of July last, at the Registrar's Office, at Truro, on Wednesday, the 24th day of October inst., at One o'clock in the afternoon:
 2 (3986th) PARTS or SHARES of the defendant Thomas Hollow
 (As executor of the last will and testament of James Hollow, deceased),
 133 (3986th) PARTS or SHARES of the defendant A. Quintrell,
 25 (3986th) PARTS or SHARES of the defendant John Roche
 (As administrator of the estate and effects of J. M. Roche, deceased); and
 7 (3986th) PARTS or SHARES of the defendant G. D. Sandy
 Of and in the said MINES.

F. HEARLE COCK, Solicitor, Truro
 (Agent for R. H. Bamfield, Plaintiff's Solicitor, St. Ives).
 Dated Registrar's Office, Truro, October 10, 1866.

PEREMPTORY SALE. WHEAL LUDCOTT AND WREY CONSOLS. VALUABLE MACHINERY AND MINE MATERIALS FOR SALE.

MR. BAKER WILL SELL, BY AUCTION, at the above mine, in the parish of St. Ives, near Liskeard, on Thursday, the 18th day of October instant, all the MACHINERY and MATERIALS on the mine, viz.:—
 ONE 60 in. cylinder PUMPING ENGINE, 9 ft. stroke, with TWO 10 ton BOILERS, and first piece of main rod.
 ONE 50 in. cylinder PUMPING ENGINE, 10 ft. stroke, equal beam, and TWO BOILERS 10 tons each.
 ONE 22 in. DRAWING ENGINE, 6 ft. stroke, with crusher attached, and ONE BOILER 8 tons.
 1 24 in. crusher complete.
 1 capstan and shears.
 150 fms. 6 in. flat rope.
 1 water-wheel, 30 ft. high, 2½ ft. wide
 with 12 heads of stamps attached, and dressing floors complete.
 5 tons ½ in. and other chain.
 10 tons of railroad iron.
 Large drying tub.
 Refreshments will be provided at Eleven o'clock. The auctioneer calls attention to the above materials, which are in good condition, and as it is intended to sell the whole in one day an early attendance is solicited.
 Wadelland, Liskeard, October 1, 1866.

NORTHAMPTONSHIRE, within five miles of the town of Northampton. The COGENHOE ESTATE, comprising several FARMS, WATER CORN MILL, SUNDRY COTTAGES, forming nearly the whole of the village; PLOTS of BUILDING and ACCOMMODATION LAND, the whole containing together 445 acres; the MANOR, with extensive rights of fishing; also the important MINERALS under the Estate, of IRONSTONE, POTTERY CLAY, SILVER and GLASS SAND,—the whole producing a present rental of £1300 per annum.

MESSRS. FAREBROTHER, CLARK, AND CO. are instructed TO SELL, BY AUCTION, at the George Hotel, Northampton, on Saturday, December the 8th, at One for Two o'clock precisely, in Twenty Lots, the COGENHOE ESTATE, freehold and tithe free, situate about midway between Northampton and Wellingborough, and intersected in part by the Peterborough branch of the London and North-Western Railway, and only a quarter of a mile from the Billing station, comprising several FARMS, WATER CORN MILL, the greater portion of the VILLAGE BUILDING and ACCOMMODATION LAND, the whole containing about 445 acres, and producing a rental of £1300 per annum, independent of the undeveloped mineral wealth comprised therein. Also, the MANOR or LORDSHIP of COGENHOE, with valuable rights of fishing. To capitalists this estate offers a wide field of enterprise, and assures a certain prospect of sound and unlimited trade. Inexhaustible beds of the finest clays, on a hill with white sand and loam, making first-class red and white bricks, tiles, drainage pipes, and terra cotta, giving a trade which will command the London market, to which there is ready access by railway and canal at remunerative rates; 10 feet of iron ore extends over more than 200 acres. This ore is now in great request in the iron-producing districts, with all of which this estate is in direct communication. By utilising the white clay and sand above the ore, the latter would be got free of expense. There are large deposits of limestone and gravel ballast. There is an excellent plant on the estate, and a line of rails already laid down, so that operations, either in the brick or iron trade, may be commenced at once.

There is a right of way over several level crossings on the Northampton and Peterboro' line of railway to the navigable river Nene. Holes will be sunk to show the minerals, and also intending purchasers will have permission to make such further borings at their own expense.

Manufactured and raw mineral samples of this estate are to be seen at the offices of Messrs. FAREBROTHER, CLARK, and Co., 5, Lancaster-place, Strand; at Messrs. DAWSON, BRYAN, and DAWSON, solicitors, 35, Bedford-square; and at Messrs. MARKHAM, Northampton, where particulars and plans of the property may be had; also at the place of sale, the "Hind," Wellingborough; the "Royal Hotel," Kettering; and the "George," Market Harborough. The lands will be shown on application to Mr. JAMES SHARMAN, Cognehoe.

BANGOR SLATE QUARRY. MESSRS. FULLER AND HORSEY are instructed TO SELL, BY PRIVATE CONTRACT, the TANY-BWLGH (BANGOR) SLATE QUARRY, about five miles from Bangor, in close proximity to the celebrated Penrhyn Quarries, yielding slates fully equal in quality, and commanding the same price in the market.

The quarry may be almost termed a maiden quarry, the workings having been only opened sufficient to prove the quality of slate, and quantity inexhaustible. For further particulars apply to Messrs. FULLER and HORSEY, 13, Billiter-street, London, E.C.

IMPORTANT TO CAPITALISTS. SALE OF VALUABLE GRANITE SETT QUARRIES, SITUATE AT NEVIN, CARNARVONSHIRE. MR. W. DEW WILL SELL, BY PRIVATE CONTRACT, TWO GRANITE SETT QUARRIES, situate close to the town of Nevin, and within three-quarters of a mile from the beach, where there is a good natural harbour for ships, and ample room for storing winter stock, and to which a right of tramway has been secured.

No. 1 QUARRY is FREEHOLD, and comprises about THREE ACRES. No. 2 QUARRY is held on a LEASE, renewable every seven years, in perpetuity, on payment of £40 each renewal.

They have been opened at a large outlay by the Nevin Granite Quarry Company (Limited), and the quality is such that it cannot be surpassed (if equalled) for street pavements in any part of the kingdom. The increasing demand for setts must render this an opportunity rarely to be met with as a safe and profitable investment.

For particulars and price, apply to Mr. JOHN, 26, Market-street, New Market-place, Manchester; and to Mr. W. DEW, Auctioneer, Wellfield House, Bangor.

TO BE LET, ON LEASE, BY TENDER, the EXTENSIVE and VALUABLE COLLIERIES, called the CLIFTON, KERSLEY, and DENTON COLLIERIES, now in working, by the owners, viz.:—
 The CLIFTON and KERSLEY COLLIERIES, situate in the immediate vicinity of Manchester, and extending under from 800 to 900 statute acres of land, comprising the mines now in working, which are some of the most valuable mine in the Lancashire coal fields, and for the produce of which there is a never failing demand.

Also, jointly with or separately from the above, the DENTON COLLIERIES situate between the towns of Ashton-under-Ly. e and Stockport, in the centre of a large manufacturing district; this colliery is working the thick upper seam of the Lancashire coal fields, and comprises the now being worked.

The whole of the VALUABLE STEAM ENGINES and other PLANT used in the working of the mines at these collieries to be purchased by the intending lessees.

The terms of letting can be seen upon an appointment being made for that purpose, at the offices of Messrs. HELPS, PARKER, and BIRCH, Chester, to whom tenders, stating the amount of dead rent, royalty, and purchase money to be paid, are to be sent on or before the 31st of October, 1866. The proprietors do not bind themselves to accept the highest or any tender.

For permission to view apply to JOHN FLETCHER, Esq., Clifton-house, near Manchester; and to Messrs. HELPS, PARKER, and BIRCH, solicitors, Chester.

NICHOLLS, MATHEWS, AND CO., ENGINEERS.
BEDFORD IRONWORKS, TAVISTOCK.
MANUFACTURERS OF STEAM ENGINES OF EVERY DESCRIPTION, made on the BEST and NEWEST PRINCIPLES. We beg more especially to call the attention of the public to the MANUFACTURE of our BOILERS, which have been tested by most of our leading engineers. PUMP WORK CASTINGS OF EVERY DESCRIPTION, both of brass and iron. HAMMERED IRON and HEAVY SHAFTS OF ANY SIZE. CHAINS made of the best iron, and war-HEAVY MINERS' TOOLS and RAILWAY WORK OF EVERY DESCRIPTION. ALL ORDERS FOR ABROAD RECEIVE THEIR BEST ATTENTION.
Messrs. NICHOLLS, MATHEWS, and Co. have had 20 years' experience in supplying machinery to foreign mines, and selecting experienced workmen to erect the same, where required.
Messrs. NICHOLLS, MATHEWS, and Co. have always a LARGE STOCK of SECOND-HAND MINE MATERIALS in stock, and at moderate prices.

SANDYS, VIVIAN, AND CO.,
COPPER HOUSE FOUNDRY, HAYLE, CORNWALL,
ENGINEERS, IRON AND BRASS FOUNDERS,
MANUFACTURERS OF PUMPING ENGINES FOR WATER-WORKS, MINING MACHINERY, MATERIALS, and TOOLS of every description.
Foreign mines supplied on the best terms, and at the shortest notice. Second-hand Mining Machinery and Pitwork in Stock; also a new 4 and a 2-horse power high-pressure vertical engines, with boilers, and a second-hand 19-inch whim engine, condensing.

PATENT FLEXIBLE TUBING,
AND BRATTLE CLOTH FOR MINES,
MANUFACTURED BY
ELLIS LEVER,
PATENTEE,
WEST GORTON WORKS, MANCHESTER.

TAVISTOCK IRONWORKS AND STEEL ORDNANCE COMPANY (LIMITED).
(LATE GILL AND CO.)
ENGINEERS, IRON AND BRASS FOUNDERS,
MANUFACTURERS OF
STEAM ENGINES, BOILERS, and MACHINERY OF ALL KINDS.
CHAINS, SHOVELS, EDGE TOOLS, and EVERY DESCRIPTION OF CAST and HAMMERED IRON FOR MINING, MANUFACTURING, RAILWAY, OR AGRICULTURAL PURPOSES.
Machinery sent to all parts of the world.
Foreign mining companies supplied on liberal terms.

RAILWAY CARRIAGE COMPANY (LIMITED)
ESTABLISHED 1847.
OLDBURY WORKS, NEAR BIRMINGHAM.
MANUFACTURERS OF RAILWAY CARRIAGES AND WAGONS, and EVERY DESCRIPTION OF IRONWORK.
Passenger carriages and wagons built, either for cash or for payment over a period of years.
RAILWAY WAGONS FOR HIRE.
CHIEF OFFICES.—OLDBURY WORKS, NEAR BIRMINGHAM.
LONDON OFFICES.—6, STOREY'S GATE, GREAT GEORGE STREET, WESTMINSTER.

THE BEVERLEY IRON AND WAGON COMPANY (LIMITED).
MANUFACTURERS OF RAILWAY CARRIAGES AND WAGONS, WROUGHT and CAST IRON CARRIAGE and WAGON WHEELS, AXLES, HAMMERED IRON, and HEAVY SMITH WORK FOR ENGINEERS, &c. BRASS and IRON FOUNDERS. MAKERS OF PORTABLE FARM RAILWAYS, TURN-ABLES, CROSSINGS, SWITCHES, &c. AGRICULTURAL MACHINISTS. MANUFACTURERS OF FIELD, ROAD, and BARN IMPLEMENTS, PATENT LORRY, CART, and CARRIAGE WHEELS, with WOOD or IRON NAVES. REAPING MACHINES, CLOD CRUSHERS, CORN MILLS, &c. SAW MILL PROPRIETORS. GENERAL TIMBER CONVERTERS for home and foreign RAILWAYS, STATIONS, BARRACKS, &c. &c.
IRONWORKS BEVERLEY, YORKSHIRE.
JAMES DEWHIRST, Sec.

THE BIRMINGHAM WAGON COMPANY (LIMITED)
MANUFACTURE RAILWAY WAGONS OF EVERY DESCRIPTION, for HIRE and SALE, by immediate or deferred payments. They have also wagons for hire capable of carrying 6, 8, and 10 tons, part of which are constructed specially for shipping purposes. Wagons in working order maintained by contract.
EDMUND FOWLER, Sec.
WAGON WORKS.—SMETHWICK, BIRMINGHAM.
* Loans received on Debenture; particulars on application.
London Agent.—Mr. E. B. SAVILE, 67, Victoria-street, Westminster, S.W.

STAFFORDSHIRE WHEEL AND AXLE COMPANY (LIMITED).
MANUFACTURERS OF RAILWAY CARRIAGE, WAGON, and CONTRA-TOES' WHEELS and AXLES, and other IRONWORK, used in the CON-STRUCTION OF RAILWAY ROLLING STOCK.
CHIEF OFFICES,
3 and 4, EXCHANGE BUILDINGS, BIRMINGHAM.

GALLOWAY'S PATENT CONE TUBES FOR STEAM BOILERS.—The introduction of these vertical taper tubes into the ordinary flued boilers PROMOTES the NECESSARY CIRCULATION OF WATER, and thus INCREASES THEIR STRENGTH and DURABILITY.
Their adoption not only adds to the steam-producing power of the flues, but renders the practice of hooping with angle or tee iron rings quite unnecessary. The tubes have now been in use upwards of 14 years, and above 22,000 are in work in various parts of the country, with the best results.
They can be easily fixed in existing boilers (owing to their taper form) by any boiler maker, but can only be obtained from the patentees, W. and J. GALLOWAY and SONS, Engineers and Boiler Makers, Manchester.

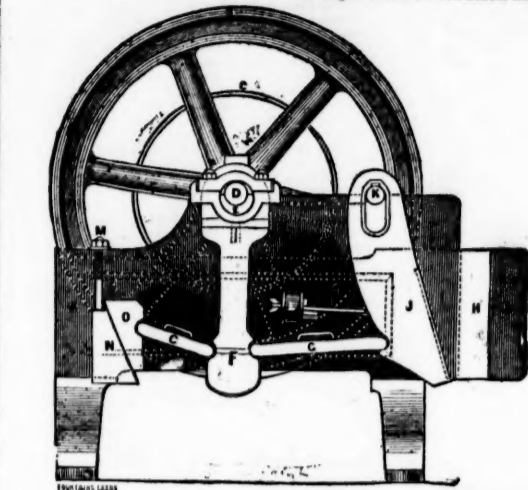
NITRO-GLYCERINE, OR NOBEL'S PATENT BLASTING OIL.—The EXPLOSIVE FORCE of this BLASTING OIL is TEN TIMES that of GUNPOWDER, and the ECONOMY and SAVING in TIME, LABOUR, and COST in removing granite and hard rock, in sinking shafts, driving tunnels, and opening forward in close ends is immense.
It will not explode from a spark or fire, but from concussion alone, and is consequently much less dangerous than gunpowder or gun-cotton.
Being heavier than water it sinks to the bottom of a wet hole, no other tamper than water being required.
One charge of this blasting oil, which is now being used with wonderful effect in all the largest slate quarries in North Wales, will displace as much slate rock as four or five charges of gunpowder; and its great force, acting on a large quantity of good slate rock, shakes and displaces it at the natural joints, or cracks, without damaging the slabs nearly so much as the more numerous blasts from any other blasting material would do.
This invaluable quarrying agent may now be obtained from Messrs. WEBB and Co., Carnarvon, sole consignees from the patentees.

S. OWENS AND CO. (LATE CLINTON AND OWENS),
WHITEFRIARS STREET, FLEET STREET, LONDON, E.C.
HYDRAULIC and GENERAL ENGINEERS,
MANUFACTURERS OF PUMPS OF EVERY DESCRIPTION FOR HAND, HORSE, STEAM, OR WATER POWER.



CREASE'S NEW AND IMPROVED PATENT BORING MACHINE.—In consequence of the various and IMPORTANT IMPROVEMENTS that an experience of several years has enabled the inventor to introduce into these machines, he can with the most perfect confidence recommend them for their increased DURABILITY, SIMPLICITY, ECONOMY, and SPEED to be attained by their adoption in DRIVING LEVELS or DRIFTS. The inventor has made arrangements to supply them in any quantity, with warranty. Orders executed according to their date of priority.
Address, EDWARD S. CREASE, Tavistock, Devon.

IMMENSE SAVING OF LABOUR.
TO MINERS, IRONMASTERS, MANUFACTURING CHEMISTS, RAILWAY COMPANIES, EMERY AND FLINT GRINDERS, MCADAM ROAD MAKERS, &c., &c.
BLAKE'S PATENT STONE BREAKER
OR ORE CRUSHING MACHINE,
FOR REDUCING TO SMALL FRAGMENTS ROCKS, ORES, AND MINERALS OF EVERY KIND.
It is rapidly making its way to all parts of the globe, being now in profitable use in California, Washoe, Lake Superior, Australia, Cuba, Chili, Brazil, and throughout the United States and England. Read extracts of testimonials:—



For circulars and testimonials, apply to—
H. R. MARSDEN, SOHO FOUNDRY,
MEADOW LANE, LEEDS,
ONLY MAKER IN THE UNITED KINGDOM.

International Exhibition, 1862—Prize Medal.
JAMES RUSSELL AND SONS
(the original patentees and first makers of wrought-iron tubes), of the CROWN PATENT TUBE WORKS, WEDNESBURY, STAFFORDSHIRE, HAVE BEEN AWARDED A PRIZE MEDAL for the "good work" displayed in their wrought-iron tubes and fittings.
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BICKFORD'S PATENT SAFETY-FUSE OBTAINED THE PRIZE MEDALS at the ROYAL EXHIBITION of 1851, at the INTERNATIONAL EXHIBITION of 1862, in London, and at the IMPERIAL EXPOSITION held in Paris, in 1865.

BICKFORD, SMITH, AND CO.
of TUCKINGMILL, CORNWALL, MANUFACTURERS OF PATENT SAFETY-FUSE, having been informed that the name of their firm has been attached to fuse not of their manufacture, beg to call the attention of the trade and public to the following announcement:—
EVERY COIL OF FUSE MANUFACTURED BY THEM has TWO SEPARATE THREADS PASSING THROUGH the COLUMN of GUNPOWDER, and BICKFORD, SMITH, AND CO. CLAIM SUCH TWO SEPARATE THREADS as THEIR TRADE MARK.

Gun Cotton—By Royal Letters Patent.
PRENTICE'S BLASTING GUN-COTTON.—This wonderful material, which may be used in hard or soft rock, and for every description of mining and quarrying work, has been still FURTHER REDUCED IN PRICE. It will be found VERY MUCH CHEAPER than powder, FAR LESS DANGEROUS, and PRODUCING NO SMOKE. It may be used with great advantage in deep cuttings or close ends.
In favour of gun-cotton much has been said; it seems destined to supplant gunpowder to a very great extent.—*Vide Scientific Review.*
The advantages of gun-cotton for mining purposes consist:—1. In its immense power and velocity of discharge. 2. The absence of smoke.—And, 3. That if exposed to damp it can be restored by drying, and rendered as effective as at first.—*Engineer.*
One well-known characteristic of gun-cotton is that of freedom from smoke and deleterious gases, hence its adaptation to mining purposes; whilst its great power renders a less amount of boring necessary, and the process of tunnelling and excavating cheaper and quicker.—*Standard.*
Experiments show that in blasting rocks 1 oz. of gun-cotton would produce the effect of 6 ozs. of powder.—*Morning Post.*
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Having been confined for several years exclusively to the manufacture of first-class Mine Surveying Instruments—which profession I trust I have to some degree mastered—I confidently venture to solicit an inspection of my manufactures, which cannot be surpassed for accuracy and general good quality by any firm either in the metropolis or the provinces.
All kinds of repairs and alterations made to instruments.
All work executed under my own direct supervision, and none but experienced assistants employed.
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I remain, Gentlemen, yours obediently,
Camborne, July 28, 1866. A. JEFFERY.

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MR. THOMAS GREENER, MINING OFFICE, NORTHGATE, DARLINGTON.

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BRITISH DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Business.	Total divs.	Per share.	Last paid.
1500	Alderley Edge, c. Cheshire	10 0 0	—	—	8 7 8	0 10 0	Aug. 1886
200	Batallack, c. St. Just	91 5 0	300	—	488 15 0	5 0 0	May, 1886
6000	British Slate Company	12 0 0	—	—	9 per cent.	—	Sept. 1886
1000	Brondy, c. Cardigan	12 0 0	—	—	8 7 0	0 6 0	Aug. 1886
6400	Cashwell, c. Cumberland	2 10 0	—	—	0 1 6	0 1 6	Aug. 1886
916	Carroll, c. Newlyn	15 5 7	—	—	13 15 0	1 0 0	Feb. 1886
867	Cwm Erfin, c. Cardiganshire	7 10 0	—	—	21 18 0	1 0 0	Oct. 1886
128	Cwmystwith, c. Cardiganshire	60 0 0	—	—	352 10 0	5 0 0	April, 1886
280	Dewent Mines, s-l, Durham	300 0 0	—	—	167 0 0	5 0 0	Oct. 1886
24	Devon Gt. Consols, c. Tavistock	128 17 6	460	430 440	1036 0 0	6 0 0	Oct. 1886
58	Dolcoath, c. Cornwall	2 14 6	—	—	81 10 0	2 0 0	Feb. 1886
6144	East Caradon, c. St. Cleer	32 0 0	—	—	113 10 0	2 0 0	May, 1886
300	East Darwen, c. Cardiganshire	24 5 0	400	—	384 10 0	5 0 0	Sept. 1886
5000	East Rosewarne, c. t. Gwincar	2 15 0	10	—	0 10 0	1 6 0	Jan. 1886
1906	East Wheal Lovell, c. Wrenford	3 9 0	10	9 1/2 10	2 7 6	0 7 6	May, 1886
2800	Foxdale, c. Isle of Man	25 0 0	—	—	69 0 0	0 10 0	Oct. 1886
6000	Frank Mills, c. Christow	3 18 6	—	—	9 5 0	0 2 0	Feb. 1886
15000	Great Laxey, c. t. Isle of Man	4 0 0	18	18 1/2 19 1/2	5 5 0	0 10 0	Sept. 1886
5908	Great Wheal Vor, c. t. Helston	40 0 0	21 1/2	18 20	10 10 0	0 10 0	Sept. 1886
1024	Herodfoot, c. t. Near Liskeard	8 10 0	34	30 34	37 10 0	0 10 0	June, 1886
6000	Hingston Down, c. t.	5 10 6	—	—	0 10 0	0 5 0	April, 1886
400	Lisburne, c. Cardiganshire, Wales	18 15 0	—	—	470 0 0	3 0 0	May, 1886
6000	Marke Valley, c. Cardigan	1 0 0	—	—	3 19 0	0 0 0	June, 1886
3000	Minera Buntingford, c. Wrexham	1 0 0	—	—	0 13 0	0 2 0	Feb. 1886
1800	Minera Mining Co., c. Wrexham	25 0 0	170	—	202 8 0	4 5 0	Aug. 1886
40000	Mynydd Iron Ore	3 5 0	—	—	0 6 6	0 2 6	Mar. 1886
600	Pant-y-Glen, c. t.	20 0 0	—	—	10 per cent.	—	May, 1886
200	Parys Mines, c. Anglesey	50 0 0	—	—	137 0 0	5 0 0	Jan. 1886
1120	Providence, c. t. Uny Lelant	10 6 7	25	22 1/2 25	81 7 6	0 10 0	Aug. 1886
512	South Caradon, c. St. Cleer	1 5 0	—	—	534 10 0	5 0 0	Sept. 1886
6000	South Darwen, c. t.	3 6 0	—	—	11 5 0	0 0 0	Jan. 1886
6000	Tincroft, c. t. Pool, Illogan	9 0 0	11	7 1/2 9	18 10 0	1 0 0	Jan. 1886
3000	W. Chiverton, c. t. Perranzabuloe	—	60	58 60	13 7 6	2 0 0	Aug. 1886
400	West Wheal Seton, c. Camborne	47 10 0	135	132 137	459 4 0	8 0 0	Aug. 1886
512	Wheal Bassett, c. Illogan	5 2 6	85	75 80	622 0 0	1 0 0	Oct. 1886
1024	Wheal Friendship, c. Devon	20 0 0	—	—	300 0 0	1 0 0	Mar. 1886
4285	Wheal Killy, c. t. Agnes	2 4 6	—	—	2 19 0	0 6 0	May, 1886
2900	Wheal Rose, c. t. Scorran	—	11	—	1 0 0	0 10 0	Feb. 1886
396	Wheal Seton, c. t. Camborne	58 10 0	160	155 160	231 15 0	5 0 0	Oct. 1886
1040	Wheal Trevelyan, c. t. Liskeard	5 17 0	—	—	34 0 0	0 5 0	June, 1886
17000	Wicklow, c. t. Wicklow	2 10 0	23 1/2	23 23 1/2	16 9 0	0 18 0	Oct. 1886

BRITISH MINES WITH DIVIDENDS IN ABEYANCE.

1200	Bryn Gwyn, c. t. Mold	9 0 0	—	—	3 3 6	0 13 6	Aug. 1885
2880	Clifford Amalgamated, c. Gwent	31 0 0	9 1/2	7 1/2 8	35 6 0	0 10 0	June, 1885
1055	Clifford Moor, c. St. Cleer	10 18 0	—	—	7 12 0	0 4 0	June, 1885
6000	East Caradon, c. St. Cleer	3 15 0	2 1/2	2 1/2	11 5 0	0 5 0	June, 1885
20000	Minera Co. of Ireland, c. t.	9 0 0	21 1/2	20 1/2 21	19 18 0	0 16 0	July, 1885
6000	New Birch Tor and Vitrifer Cons. t.	1 6 6	—	—	0 13 0	0 2 0	Oct. 1885
6000	West Bassett, c. Illogan	1 10 0	—	—	26 14 0	0 5 0	July, 1885
1024	Wheal Killy, c. t. Christow	—	—	—	—	0 2 6	Oct. 1885
1024	Wheal Mary Ann, c. t. Menheniott	8 0 0	12	10 12	59 17 6	0 10 0	Mar. 1885

FOREIGN DIVIDEND MINES.

12000	Cape Copper Mining	7 0 0	10	9 1/2 9 1/2	2 12 6	0 10 0	April, 1886
1500	East Indian Coal, Calcutta	10 0 0	—	—	1 5 4	0 2 0	Oct. 1886
25000	Fortuna, c. Spain	10 0 0	—	—	7 1/2 per cent.	—	Jan. 1886
10000	Genesee, c. t. 15000 £5 pd., 5000 £2 pd.	3 0 0	—	—	11 5 4	0 5 0	Jan. 1886
15000	Linares, c. Spain	3 0 0	—	—	0 12 0	0 2 0	Jan. 1886
9275	New Wildberg, c. t.	2 0 0	—	—	10 per cent.	—	Yearly
50000	Panulillo, c. t.	3 0 0	3 1/4	3 1/4 3 1/4	2 19 8	0 16 8	Dec. 1885
10000	Pontgibet, c. t. France	20 0 0	—	—	0 15 6	0 1 0	Jan. 1886
97500	Port Phillip, c. t. Clunet	1 0 0	—	—	0 1 0	0 9 0	May, 1886
20000	Scottish Australian Mining Co. t.	1 0 0	—	—	65 15 0	4 0 0	June, 1886
11000	St. John del Rey, Brazil	15 0 0	—	—	9 9 0	0 1 0	Jan. 1886
60000	Victoria (London) 25000 £1 pd., 25000 £2 pd.	3 0 0	—	—	0 19 6	0 2 6	May, 1886
40000	West Canada Mining Company	1 0 0	—	—	—	—	—

FOREIGN MINES WITH DIVIDENDS IN ABEYANCE.

10000	Altan and Quenagen United, c. t.	4 10 0	—	—	4 5 0	0 15 0	Nov. 1883
20000	Australian, c. t. South Australia	7 7 6	—	—	0 2 0	0 1 0	June, 1885
2464	Burra Burra, c. t. South Australia	5 0 0	—	—	325 0 0	5 0 0	Dec. 1884
12000	Cobre Copper Company, c. t. Cuba	40 0 0	3 1/2	1 1/2 2 1/2	101 0 0	1 0 0	Jan. 1885
10000	Copiapu Mining Company, Chile	16 0 0	—	—	6 18 0	0 10 0	Nov. 1882
100000	Don Pedro N. del Rey, Brazil	2 0 0	—	—	0 9 0	0 9 0	Dec. 1883
70000	English and Australian, c. t.	2 0 0	—	—	0 14 0	0 1 0	Jan. 1886
25000	Gen. Mining Assoc., Nova Scotia	20 0 0	21	20 21	21 0 0	1 0 0	June, 1884
60000	Kapunda Mining Co., Australia	1 0 0	—	—	0 12 0	0 1 0	June, 1885
10000	Lusitania (Portugal)	2 10 0	—	—	1 7 6	0 3 0	June, 1885
108815	Mariquita and New Granada	1 0 0	—	—	0 9 6	0 1 6	July, 1883
45174	United Mexican, c. t. Mexico	28 5 6	2 1/2	1 1/2 2 1/2	2 19 0	0 5 0	Sept. 1884
10000	Vancouver, c. t.	15 0 0	—	—	0 15 0	0 5 0	Nov. 1884
45000	Yundamutana, c. t. S. A. t.	3 0 0	1	3 1/2 3 1/2	0 5 0	0 5 0	Aug. 1883

NON-DIVIDEND FOREIGN MINES.

Shares.	Mines.	Paid.	Last Pr.	Bus. done.	Last Call.
35000	Alamillos, c. Spain	2 0 0	—	—	—
150000	Anglo-Brazilian, c. t.	9 0 0	—	—	—
40000	Britany Silver-Lead Mines, France	15750 18s. pd.]	—	—	—
25000	Capita, c. Mexico	1 12 0	—	—	—
30000	Chontales, c. t. Nicaragua	2 10 0	—	—	—
10000	Copiapu Smelting, Chile	10 0 0	—	—	—
300	Copper Mines Co. of South Australia	150 £100 pd.]	—	—	—
50000	East del Rey, c. Brazil	2 15 0	—	—	—
15000	El Chico Silver Mining and Reduction Company	4 10 0	—	—	—
8000	English and Canadian Mining Company	5 0 0	—	—	—
40000	Fortuna, c. West Australia	2 0 0	—	—	—
50000	Frontino and Bolivia, c. New Granada	1 10 6	—	—	—
80000	Great Northern, c. South Australia	1 11 6	—	—	—
10000	Great Barrier Land, Mining, c. New Zealand	5 0 0	—	—	—
12000	Northern Coal and Iron, c. New Zealand	900 £5 pd., 900 £3 pd.]	—	—	—
50000	Nova Scotia Land and Gold	1 15 0	—	—	—
15000	Orea, c. New Zealand	1 10 0	—	—	—
15000	Pachuca Silver Mining Company, Mexico	1 0 0	—	—	—
6000	Peel River Land and Mineral	100 0 0	—	—	—
20000	Pestana, c. t.	2 0 0	—	—	—
30000	Quebrada, c. Venezuela	10 0 0	—	—	—
10174	Rhenish Consolidated, c. t. 15000 £5 pd., 4175 £2 10s. pd.]	0 7 6	—	—	—
50000	Rosa Grande, c. Brazil	0 7 6	—	—	—
15000	San Pedro del Monte, c. Mexico	3 0 0	—	—	—
16000	San Roque, c. Spain	0 15 0	—	—	—
30000	Val Antigua, c. t.	5 10 0	—	—	—
5000	Val Sassam, c. t.	20 0 0	—	—	—
5000	Valgodemard Mining Company	0 15 0	—	—	—
25000	Vallazasca, c. Italy	1 0 0	—	—	—
45000	Victor Emanuel, c. Italy	1 0 0	—	—	—
20000	Washoe, c. 10000 £5 pd., 10000 £2 pd.]	1 0 0	—	—	—
80000	Worthing, c. South Australia	1 0 0	—	—	—
7500	Yorke Peninsula, South Australia	1 0 0	—	—	—

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Shares.	Banks.	Paid.	Last Pr.	Bus. done.	Last Call.
40000	Alliance	25 0 0	20 1/2	19 1/2 19	—
40000	Australian Mort. Land and Finance	5 0 0	—	—	—
30000	Australasian	40 0 0	—	65 67	—
10000	Bank of Egypt	25 0 0	30	—	—
10000	Bank of New Zealand	10 0 0	18	18 18	—
25000	Bank of Taga	10 0 0	7	8 5	—
25000	Bank of Queensland	25 0 0	—	—	—
50000	Bank of Victoria, Australia	25 0 0	—	39 41	—
50000	Brazilian and Portuguese	10 0 0	9	8 9	—
8015	Canada Company	32 10 0	80	—	—
50000	Canadian Loan and Investment	2 10 0	1 1/2	—	—
40000	Chart. Bank India, Aust. & China	20 0 0	18	17 19	—
30000	Chart. Merc. India, Lond. & China	25 0 0	37	34 35	—
50000	City	25 0 0	17	14 16	—
20000	Colonial	25 0 0	40	37 39	—
40000	Company of African Merchants	3 0 0	2	2 3	—
150000	Consolidated Bank	4 0 0	3 1/2	—	—
200000	Credit Foncier and Mobilier of England	8 0 0	4 1/2	3 1/2 3 1/2	—
10000	Discount Corporation	20 0 0	—	—	—
20000	East London	5 0 0	3 1/2	—	—
50000	English, Scotch & Aust. Chart.	20 0 0	19	17 18	—
20000	English and Swedish	20 0 0	14	—	—
25000	General Credit and Finance of London	6 0 0	4 1/2	3 1/2 3 1/2	—
20000	Imperial Bank	20 0 0	25	23 25	—
150000	International Financial Society	5 0 0	3 1/2	3 1/2 3 1/2	—
200000	International Land Credit	6 0 0	3 1/2	—	—
4000	London African Trading	10 0 0	—	—	—
25000	London Bank of Australia	20 0 0	23 1/2	22 23	—
27500	London Bank and County	10 0 0	17	14 16	—
40000	London Financial Association	25 0 0	—	8 1/2 9 1/2	—
72000	London Joint-Stock	15 0 0	44	41 43	—
5000	London Mercantile Discount	10 0 0	—	—	—
10000	London and South-Western	20 0 0	18	—	—
50000	London and Westminster	20 0 0	98	92 94	—
50000	Mercantile and Exchange	11 10 0	—	—	—
17150	Metropolitan and Provincial	20 0 0	17	—	—
50000	Mineral Rights Association	20 0 0	1 1/2	—	—
20000	National of Australia	4 0 0	6	5 6	—
20000	National of Liverpool	10 0 0	13	—	—
40000	National	30 0 0	72	65 68	—
27500	New South Wales	20 0 0	45	43 45	—
40000	Union of Australia	25 0 0	47	45 48	—
80000	Union of London	15 0 0	46	44 46	—

PROGRESSIVE MINES.

Shares.	Mines.	Paid.	Last Pr.	Bus. done.	Last Call.
4000	Ballaclough, c. t. Man, c. t.	10 0 0.	—	2	Oct. 1866
3000	Bedford Unit, c. t. Tavistock	2 6 8.	—	—	—
3200	Bedol Aur, c. t. Holywell	1 2 0.	—	—	July, 1866
500	Billins, c. t. Flint	30 0 0.	—	—	Fully pd.
1000	Blaendyffryn, c. t.	2 0 0.	—	—	Mar. 1866
6000	Bollinger Hill Consols, c. t.	0 5 0.	—	¾ ½	July, 1865
1248	Boscawen, c. t. St. John	1 0 0.	—	—	Sept. 1866
5000	Bottle Hill, c. t. Plympton	14 6 0.	—	—	June, 1866
200	Brynfod Hall, c. t. Flint	23 0 0.	—	—	Jan. 1866
5000	Bryn Gwilog, c. t. Flint	9 0 0.	—	—	June, 1864
30000	Calbeck Fells, c. t. Cumber.	1 2 6.	—	—	July, 1866
1000	Camborne Consols, c. t.	18 10 0.	—	—	Feb. 1866
4600	Camborne Consols, c. t. W. Fran.	11 8 0.	1 ½.	1 ½	July, 1866
8000	Capa Cornwall, c. t. St. John	1 0 0.	—	—	Jan. 1866
2000	Caradon & Phoenix Cons.	0 12 0.	—	—	April, 1865
914	Caradon Cons., c. t. St. Cleer	30 16 0.	—	—	Aug. 1866
1000	Carn Brea, c. t. c. t. Illogan	23 0 0.	—	—	Sept. 1866
6000	Carn Camborne, c. t. Cambdn.	2 0 6.	28s.	—	Oct. 1866
4006	Cardigan Cons. [1000 £2 pd., 3005 £2 5s. pd.]	—	—	—	April, 1866
4000	Cardiganshire, c. t. St. John	10 0 0.	—	—	Mar. 1866
20000	Castell (3200 £2 pd., 1880 £13 pd.)	—	—	—	Mar. 1865
60000	Castell Carru Dochan, c. t.	0 8 6.	—	—	—
2500	Cefn Cilcen, c. t. Flint	2 18 0.	—	—	Aug. 1866
2500	Central Minera, c. t.	3 7 6.	—	—	April, 1866
18000	Central Snailbeck c. t.	1 0 0.	—	—	Fully pd.
3000	Chiverton, c. t. Perranzabul.	8 17 6.	—	4 4 ½	Aug. 1866
6000	Chiverton Moor, c. t. Perranz.	5 11 0.	5 ½.	4 ½	July, 1866
4000	Clara Unit, c. t. St. John	2 0 0.	—	—	July, 1866
16000	Colaarla & Bond [5800 £1 pd., 10700 £6s. pd.]	—	—	—	Feb. 1866
256	Condurrow, c. t. c. t. Camborne	76 10 0.	—	35 40	—
5000	Connorree, c. t. c. t. Wicklow	1 0 0.	—	13s. 15s.	Fully pd.
2450	Cook's Kitchen, c. t. Illogan	19 14 9.	4 ½.	4 ½	July, 1866
1242	Copper Hill, c. t. Redruth	12 10 0.	—	—	June, 1866
6000	Corishale and Flint	1 0 0.	—	—	Mar. 1865
6000	Corwall and Consols	1 8 0.	—	—	May, 1866
861	Craney, c. t. Camborne	32 4 0.	—	—	July, 1866
3000	Craney & Wh. Abraham	4 0 0.	—	—	Mar. 1866
12000	Crelake, c. t. Tavistock	3 8 0.	—	—	July, 1866
2500	Crowan Consols, c. t. Crowan	5 11 0.	—	—	Dec. 1865
6000	Cuddra, c. t. St. Austell	4 18 6.	—	—	June, 1866
1000	Dale, c. t. North Stafford	1 0 0.	4s.	3s. 5s.	April, 1866
1000	Darrett, c. t. St. John	9 0 0.	—	—	July, 1866
4076	Devon and Cornwall, c. t.	6 6 3.	—	—	—
5000	Devon Great Marla	7 0 0.	—	—	May, 1866
1024	Devon Wheel Lops, c. t.	17 0 0.	—	—	July, 1866
12800	Drake Wells, c. t. Calstock	2 1 0.	—	—	—
656	Ding Dong, c. t. Gulval	48 14 0.	—	—	Sept. 1865
15000	Dolifwynog, c. t.	0 15 0.	—	—	June, 1866
25000	Dundaik, c. t. St. John	12 0 0.	—	—	July, 1866
3000	Dyffogwm, c. t. Wales	12 0 0.	—	—	—
1000	Eaglebrook, c. t.	17 19 0.	—	—	Feb. 1865
512	East Bassett, c. t. Redruth	29 10 0.	21	21 22	—
1000	East Bassett and Grylls, c. t.	3 5 0.	—	—	July, 1865
6000	E. Bottle Hill, c. t. Plympton	0 6 6.	—	—	Oct. 1865
4000	East Buller, c. t. Gwennap	2 0 0.	—	—	Mar. 1865
4000	East Chiverton, c. t. St. John	2 0 0.	2 ½.	1 ½	April, 1866
2048	E. Falmouth, c. t. c. t. Kenwyn	5 0 6.	—	—	April, 1864
6000	E. Grenville, c. t. Camborne.	3 1 0.	2 ½.	2 ½	May, 1866
4000	E. Gunnslake & S. Bed. c. t.	9 0 6.	—	½ ¾	Aug. 1866
6145	East Jane, c. t. Cardinham	2 17 6.	—	—	April, 1865
6000	East Laxey, c. t. Isle of Man	2 10 0.	—	—	Dec. 1865
6000	East Moor, c. t.	0 5 0.	—	—	Aug. 1866
3200	East Penryn, c. t. c. t. Kenwyn	4 2 0.	—	½ ¾	July, 1866
1000	E. Treasewen, c. t. Gwennap	0 10 0.	—	—	May, 1865
6000	East Snaefell, c. t. L. of Man	2 0 0.	—	—	Dec. 1864
5610	East Seton, c. t. Camborne	0 11 0.	—	—	Oct. 1865
6000	East St. Just, c. t.	3 0 0.	—	—	Jan. 1866
256	East Tolrus, c. t. Redruth	96 0 0.	—	—	April, 1866
6000	E. Wh. Agar, c. t. St. Cleer	12 17 0.	—	—	Jan. 1865
2048	East Whal, c. t. c. t. Kenwyn	4 2 0.	—	—	July, 1866
4000	E. W. Russell, c. t. Tavistock	11 11 0.	3 ¾.	2 ¾	July, 1865
15000	Ellen Unit, c. t. St. Agnes	1 0 0.	—	—	Nov. 1866
6144	Ether Unit, c. t. Cardinham	0 6 3.	—	—	July, 1865
6000	Fortey Consols	0 12 6.	—	—	—
940	Fowce Con. c. t. Tywardreath	5 1 6.	—	—	June, 1866
6000	Furze Hill Wood Con. Buckl.	1 16 0.	—	—	Feb. 1866
10000	Furdon, c. t. c. t. L. of Man	1 0 0.	—	—	July, 1866
1026	Gardn, c. t. Morval	15 12 9.	—	—	Mar. 1866
4096	Garlidna Unit, c. t. Wendron	5 7 7.	—	—	Feb. 1866
4000	Gawton, c. t. Tavistock	3 5 6.	—	—	Feb. 1866
6000	Gen. Min. Co. for Ireland, c. t.	4 0 0.	—	—	—
40000	Glasgow Caradon c. t. [3000 £1 pd., 1000 10s. pd.]	—	—	—	Sept. 1866
2000	Golech Hill, c. t. Flintshire	1 13 5.	—	—	Sept. 1865
6144	Gonnamen, c. t. c. t. Kenwyn	4 2 0.	—	¾.	July, 1866
5000	Gothic, c. t. c. t. Cardigan	2 10 0.	—	—	Fully pd.
486	Grahamer and St. Aubyn	69 0 0.	5	5 ½	July, 1865
4096	Great Caradon, c. t. St. Ives	3 9 0.	—	¾ ½	Aug. 1866
10000	Great Devon and Bedford	2 10 0.	—	—	Mar. 1866
3000	Gr. East Lovell, c. t. Helston	1 15 0.	—	—	May, 1865
6000	Great Moor, c. t. Isle of Man	1 0 0.	—	—	June, 1866
5000	Great North Downs, c. t.	5 18 0.	—	—	Oct. 1866
40000	Gr. Northern of Ireland	0 10 0.	—	—	—
12500	Gr. No. Laxey (Isle of Man)	0 10 0.	13s.	1 ½	Feb. 1865
6000	Great Reddick, c. t. c. t. b.	1 17 0.	10s.	¾ ½	April, 1866
6000	Great South Chiverton, c. t. c. t.	1 9 6.	—	—	July, 1866
6000	Gr. So. Tolrus, c. t. Redruth	0 19 6.	—	—	Aug. 1866
6000	Great West of Devon, c. t.	1 0 0.	—	—	July, 1864
3313	Great Whal Badder	1 17 0.	—	—	June, 1866
6000	Gt. Wh. Busy, c. t. c. t. Kenwyn	16 19 6.	—	—	July, 1866
1798	Gt. Wh. Fortune, c. t. Breage	26 12 0.	4 ½.	—	Sept. 1866
10000	Great Wh. Metal, Breage	2 0 0.	—	—	May, 1865
119	Great Work, c. t. Germoe	100 0 0.	—	—	—
2500	Grit and Stapely, c. t.	10 0 0.	—	—	July, 1864
10240	Gunnislake (Clitter), c. t. c.	4 15 0.	—	—	Aug. 1866
6000	Gwydyr, c. t. c. t. Kenwyn	1 0 0.	—	—	July, 1866
6000	Hallenbeagle, c. t. Kenwyn	2 9 0.	—	—	Aug. 1866
5400	Harwood, c. t. Durham	0 6 0.	—	—	Sept. 1864
5000	Havan, c. t. Cardigan	4 15 0.	—	—	Mar. 1866
7219	Hawkmoor, c. t. c. t. Calstock	3 14 0.	—	—	July, 1866
5000	Hendre, c. t. Flint	4 0 0.	—	—	April, 1865
6000	Hoglan, c. t.	0 19 6.	—	—	June, 1866
5000	Lady Bendor, c. t. c. t. Kenwyn	4 2 0.	—	—	July, 1866
3000	Leadwood, c. t. c. t. Lydford	3 6 6.	—	—	June, 1866
1019	Leeds and St. Aubyn, c. t.	19 13 4.	—	—	Mar. 1866
963	Lelant Cons. c. t. c. t. Lelant	35 0 0.	—	—	Mar. 1863
160	Levant, c. t. c. t. St. Just	10 8 1.	—	—	June, 1866
2000	Lower Park, c. t. Denbigh	3 11 0.	—	—	Jan. 1864
3500	Mace-y-Safn, c. t.	30 0 0.	—	—	—
6000	Mandlin, c. t. c. t. Llewellyn	1 0 0.	—	—	May, 1865
6000	Merrilyn, c. t. Flint	3 15 6.	—	—	Jan. 1866
3000	Minera Western Boundary	0 2 6.	—	—	Sept. 1863
4375	Molland, c. t. South Moulton	3 13 0.	—	—	Aug. 1863
640	Mount Pleasant, c. t. Mold	4 0 0.	—	—	—
1024	Nangles, c. t. c. t. Kea	26 5 0.	—	12 15	Oct. 1866
4000	Nanteos, c. t. Cardigan	1 0 0.	—	—	Fully pd.
612	Nant Minra, c. t.	6 10 0.	—	—	Jan. 1865
3200	Nanty Minra, c. t.	20 0 0.	—	—	—
2000	New Clifford, c. t. Gwennap	2 0 0.	2	1 ½	Mar. 1866
24000	New Cornish [12000 £1 pd., 12000 12s. pd.]	—	—	—	Dec. 1864
6400	N. Crow Hill, c. t. St. Stephen	3 1 0.	—	—	Aug. 1866
6000	New East Birch Tor, c. t.	1 2 6.	—	—	June, 1865
6514	New E. Russell, c. t. Tavistock	0 10 6.	—	—	Sept. 1866
6400	Nether Heath, c. t. Dutton	1 0 0.	—	—	May, 1865
6400	New Heath, c. t. c. t. Breage	14 11 0.	—	—	Mar. 1866
6400	New Pembroke, c. t.	0 19 0.	—	—	July, 1866
5755	New Trelegh, c. t. Redruth	4 8 0.	—	—	May, 1866
960	New Trevenen, c. t. Wendron	8 14 0.	—	—	May, 1866
470	Newtonards Min. Co. Down	50 0 0.	—	—	—
4096	New Wheel Lovell, c. t.	1 9 0.	—	—	Aug. 1866
15000	New Wheel Martha, c. t.	1 0 0.	—	—	July, 1866
6000	New Wh. Agar, c. t. Cambn.	53 16 0.	40	35 40	Sept. 1866
6000	North Chiverton, c. t.	6 0 0.	—	—	June, 1866
16000	North Devon, c. t.	0 16 0.	—	—	July, 1866
5000	No. Dolcoath, c. t. Camborne	3 17 6.	—	—	April, 1866
6000	North Downs, c. t. Redruth	4 11 4.	½.	¾ ½	Aug. 1866
1361	No. Grahmer, c. t. Redruth	6 14 9.	—	—	Aug. 1866
16000	N. Hallenbeagle [8000 £1 pd., 8000 8s. 6d. pd.]	—	—	¾ 1	Sept. 1866
6000	North Jane, c. t. c. t. Kenwyn	3 6 6.	—	—	—
6000	North Kith, c. t. c. t. Kenwyn	1 0 0.	—	—	—
2000	North Levant, c. t. c. t. St. John	10 8 0.	—	—	Sept. 1866
20000	Nth. Minera, c. t. Wrexham	1 0 0.	—	—	Fully pd.
4000	N. Phoenix, c. t. Linkinghorne	4 0 0.	—	—	May, 1864
6400	North Pool, c. t. Illogan	4 8 6.	6 ½.	—	June, 1866
700	No. Roskear, c. t. Camborne	47 5 0.	5	3 5	Sept. 1866
2000	No. Shepherd, c. t. Newlyn	6 0 0.	—	—	July, 1866
5000	North Shekley, c. t. St. Agnes	5 0 0.	¾.	3 ¾	April, 1866
5000	North Western Bassett, c. t.	5 0 0.	—	—	—
5610	North Wheel Croft, c. t.	3 5 4.	1 ½.	1 ½	July, 1866
6144	N. Wh. Robert, Spm. Spiney	4 6 5.	—	—	Feb. 1866
2288	Okel Tor, c. t. Calstock	2 7 4.	—	—	Aug. 1866
8000	Old Gunnislake, c. t. Calstock	2 10 0.	—	—	Aug. 1866
5000	Orsed, c. t. Flintshire	0 8 0.	—	—	Mar. 1866
6400	Orsed, c. t. Consol, c. t. Laxey	1 18 0.	—	—	Sept. 1866
5000	Parand & Blazey Cons.	18 0 0.	—	—	—
8465	Pedin-and-drea, c. t. Redruth	5 10 6.	—	—	July, 1866
5000	Pendean Consols, c. t. St. Just	5 11 0.	—	—	Aug. 1866